

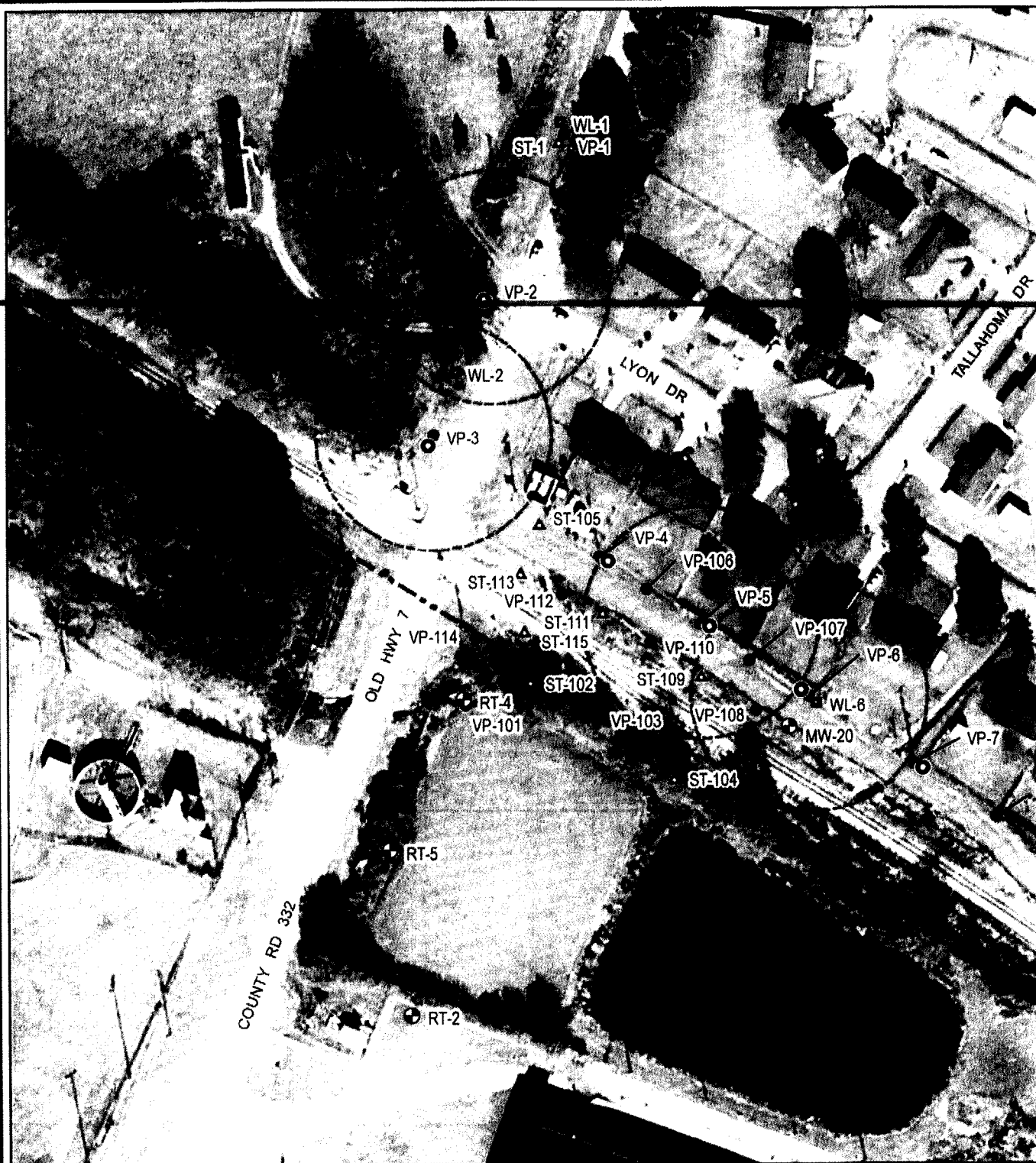
AMW-2



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CITY (KNOXVILLE) DIVISION (ENVIS) D:\ALTON\ PIC (P. WAGNER) PM (S. SHARP) TM (M. HEAP)
 PROJECT IN300599.DWG PATH T:\GIS\MISC\ORNO\OAS\SI\ICE_INWP SITE MAP.MXD DATE SAVED 8/1/2015 8:02:02 PM BY BALTON



PROJECTION: NAD 1983 StatePlane Mississippi West FIPS 2302 Feet
 AERIAL SOURCE: ESRI Online Imagery (NAIP, July 2014).

LEGEND

Approximate Site Boundary
 100-foot radius

Monitoring Well
 Temporary Monitoring
 Stratigraphy Boring

Soil-Gas Port
 Waterloo Profile
 Proposed Soil-Gas Port
 Proposed Residential VI Sample

NOTE: All locations are approximate.

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 4, 2015 9:12 AM
To: Luetscher, Greg
Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC
Attachments: 0531 001.pdf

F
n

Information Redacted pursuant to
5 U.S.C. Section 552 (b)(5), Exemption 5,
Privileged Inter/Intra Agency Document
Specific Privilege: Deliberative Process

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Don Williams [<mailto:dwilliams@iceindustries.com>]
Sent: Monday, August 03, 2015 5:34 PM
To: Bastek, Brian
Cc: Karp, Jeffrey M.; john.ellis@arcadis-us.com; David W. Nunn; Paul Bishop; Gary Houston
Subject: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Enclosed please find the Vapor Intrusion workplan requested in your letter of June 30, 2015. A hard copy was sent overnight. Thank you.

Don Williams

Ice Industries Grenada
635 Highway 332
Grenada, MS 38901
Phone 662.226.1161 ext 6113
Fax 662.226.1166

From: gsa [<mailto:administrator@iceindustries.com>]
Sent: Monday, August 03, 2015 3:24 PM
To: Don Williams
Subject: Attached Image

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 4, 2015 9:09 AM
To: john.ellis@arcadis-us.com
Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC
Attachments: 0531_001.pdf

Hi John.

Thanks for getting the work plan into everyone on time. If you don't mind can you please email me a clean copy of the work plan. The one I received (attached) was scanned in and may be missing parts, especially with the figures. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Don Williams [mailto:dwilliams@iceindustries.com]
Sent: Monday, August 03, 2015 5:34 PM
To: Bastek, Brian
Cc: Karp, Jeffrey M.; john.ellis@arcadis-us.com; David W. Nunn; Paul Bishop; Gary Houston
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Phone 662.226.1161 ext 6113
Fax 662.226.1166

From: gsa [mailto:administrator@iceindustries.com]
Sent: Monday, August 03, 2015 3:24 PM
To: Don Williams
Subject: Attached Image

Pressley, Miriam

From: Bastek, Brian
Sent: Monday, August 3, 2015 10:09 PM
To: Norman, Michael
Cc: Bentkowski, Ben;Hodoh, Ofia;Brian Holtzclaw
Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC
Attachments: 0531_001.pdf

FYI. Ben/Ofia, I will forward a SSS work request tomorrow morning to Glenn. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Don Williams [<mailto:dwilliams@iceindustries.com>]
Sent: Monday, August 03, 2015 5:34 PM
To: Bastek, Brian
Cc: Karp, Jeffrey M.; john.ellis@arcadis-us.com; David W. Nunn; Paul Bishop; Gary Houston
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Grenada, MS 38901
Phone 662.226.1161 ext 6113
Fax 662.226.1166

From: gsa [<mailto:administrator@iceindustries.com>]
Sent: Monday, August 03, 2015 3:24 PM
To: Don Williams
Subject: Attached Image

Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, August 26, 2015 11:50 AM
To: Ellis, John
Cc: Uppencamp, Robert
Subject: RE: Grenada Manufacturing

Working on the map. Ben is out, but maybe he can speak with Rob tomorrow morning. I'll call you a little later to discuss both items.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [mailto:John.Ellis@arcadis-us.com]
Sent: Wednesday, August 26, 2015 11:02 AM
To: Bastek, Brian
Cc: Uppencamp, Robert
Subject: Grenada Manufacturing

Hey Brian,

Have you been able to contact Ben or someone else about the analyte list? I have copied Rob on this email so we hopefully arrange a quick call today to discuss.

Also, any luck on a map?

Thanks,
john

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

ARCADIS U.S., Inc. | 10352 Plaza Americana | Baton Rouge, LA, 70816

T: 225.292.1004 (b)(6), 225.218.9677

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Professional Registration / PG-TX, # 4082 / PG-LA # 408

ARCADIS, Imagine the result



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Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, August 26, 2015 10:09 AM
To: Luetscher, Greg
Subject: FW: Moose Lodge Road
Attachments: Rockwell Moose Lodge Road 082015 GW review and comment letter(jc).pdf
Information Redacted pursuant to
5 U.S.C. Section 552 (b)(5), Exemption 5,
Privileged Inter/Intra Agency Document
Specific Privilege: Attorney Client

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

-----Original Message-----

From: Willie_McKercher@deq.state.ms.us [mailto:Willie_McKercher@deq.state.ms.us]
Sent: Tuesday, August 25, 2015 6:09 PM
To: Anderson, Meredith
Cc: Bastek, Brian; trey_hess@deq.state.ms.us; Jimmy_Crellin@deq.state.ms.us
Subject: Fw: Moose Lodge Road

Meredith,

I want to share this letter with you that we put in the mail to Arvin Meritor today in regards to the Moose Lodge Road site work that they have recently been conducting. We want to keep you and Brian in the loop as we continue the site investigations. Let me know if you or Brian have any questions or comments going forward.

Regards,
Willie

Willie McKercher, P.E., BCEE
Assessment and Remediation Branch Chief
Mississippi Department of Environmental Quality
Phone: (601) 961-5731
Fax: (601) 961-5300
Willie_McKercher@deq.state.ms.us

----- Forwarded by Willie McKercher/HW/OPC/DEQ on 08/25/2015 04:13 PM -----

From: Jimmy Crellin/GW/OPC/DEQ
To: "O'Connor, David A. (David.OConnor@Meritor.com)"
<David.OConnor@Meritor.com>,
Cc: "Dagon, Matthew" <Matt.Dagon@stantec.com>, James Peebles
<JPeebles@tandmassociates.com>, Trey Hess/HW/OPC/DEQ@DEQ,
Willie McKercher/HW/OPC/DEQ@DEQ

Date: 08/25/2015 02:44 PM

Subject:Moose Lodge Road

David,

Please see the attached letter discussing the need for further investigation of the Moose Lodge Road Site.

(See attached file: Rockwell Moose Lodge Road 082015 GW review and comment letter(jc).pdf)



STATE OF MISSISSIPPI

PHIL BRYANT
GOVERNOR

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

GARY C. RIKARD, EXECUTIVE DIRECTOR

August 25, 2015

David O'Connor
Meritor, Incorporated
2135 West Maple Road
Troy, Michigan 48084-7186

Re: Groundwater Monitoring Reports
Rockwell International Moose Lodge Road Disposal Site
Grenada, Mississippi

Dear Mr. O'Conner:

The Mississippi Department of Environmental Quality (MDEQ) has completed review of the referenced documents (Reports) prepared on behalf of Meritor by Stantec Consulting Services, Inc. covering groundwater monitoring from the fourth quarter of 2013 through the second quarter of 2015.

The Reports and those prior, adequately document the presence of shallow groundwater contamination at the site in two plumes per sampling of existing wells. The plumes as illustrated in the Reports have been laterally delineated in general by clean sentinel wells. In some areas delineation has been inferred based on an interpretation that net unidirectional plume movement has been minimal due to continual changes in groundwater flow direction. However, groundwater data in the most recent Stantec report and from investigations conducted in May and July of 2015 near the Moose Lodge road site by T&M Associates indicates that the current delineation is not complete.

The recent data indicates that groundwater contamination by constituents seen at the Moose Lodge Road site is present at off-site locations, northwest of monitoring wells PZ-42 and PZ-45, and along an east-west line north of PZ-45 and south of PZ-42. Contamination is present both above and below the nominal on-site lower confining unit. This contamination may have originated at the Grenada Manufacturing plant site, at the Moose Lodge Road site, at locations as yet unknown, or a combination of these sources.

MDEQ therefore directs Meritor to immediately develop a workplan to define, by means of substantiated data, the full extent of lateral and vertical boundaries of groundwater contamination present on the Moose Lodge Road site. Delineation work should focus first on the relationship between contamination present on the Moose Lodge Road site and that seen to the northwest of PZ-42 and PZ-45, and secondly on any co-mingling of groundwater contamination at the Moose Lodge Road site with that seen at the Grenada Manufacturing plant site or from other as yet unknown sources. If it is confirmed that contamination northwest of PZ-42 and PZ-45 has originated on either known Meritor site, or from another source attributable to historic operations conducted by Meritor, MDEQ will require that Meritor, without delay, implement measures to prevent further off-site contaminant migration and to effectively remediate any attributable off-site contamination.

OFFICE OF POLLUTION CONTROL

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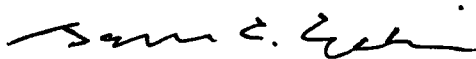
Letter: David O'Connor
August 25, 2015
Page 2

The investigations by T&M Associates referenced in this letter were performed with minimal notification to MDEQ and without opportunity for review or comment. MDEQ requires that plans for any future investigations relative to the Moose Lodge Road site be subject to its approval, and that reports generated in those investigations be submitted to it in a timely manner. MDEQ also requests that any historical information regarding the Grenada Manufacturing site it may desire, or any information on the Moose Lodge Road site not presently in the possession of MDEQ, be made available to it.

Please submit the required workplan and suggested dates for field work, including sampling of existing wells, on or before September 30, 2015.

MDEQ appreciates the continuing cooperation of Meritor and its consultants. Any questions or comments may be directed to Jimmy Crellin at (601) 961-5230.

Sincerely,

A handwritten signature in black ink, appearing to read "James C. Crellin".

James C. Crellin, RPG
Project Manager

cc: Matt Dagon, Stantec
Jim Peeples, T&M Associates
Trey Hess, MDEQ
Willie McKercher, MDEQ

Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, August 26, 2015 9:26 AM
To: Bentskowski, Ben
Subject: Call today?

Hi Ben. Are you available to have a quick call with Arcadis, the contractor doing the VI sampling in Grenada? Either today or tomorrow. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 25, 2015 3:14 PM
To: Reid Stanford; Holtzclaw, Brian
Subject: RE: Work Plan

Hi Reid. When I have an EPA-approved work plan in my hands you'll be one of the first to receive it. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Reid Stanford [mailto:reidstanford@gmail.com]
Sent: Tuesday, August 25, 2015 3:05 PM
To: Bastek, Brian; Holtzclaw, Brian
Subject: Work Plan

Hey Guys,
We have hired vendors to do testing at the same time that Meritor will be testing. However, we still need the work plan so that we can be coordinating with them on what type of sampling that will be done in the homes. Please get this to me asap so that I can acquire the necessary authorizations.

Thanks,
Reid

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 25, 2015 11:01 AM
To: Ellis, John
Subject: RE: Grenada Public Meeting Sept 1st

Looks like it is just you and me for this call, so I'll just call your number.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [mailto:John.Ellis@arcadis-us.com]
Sent: Monday, August 24, 2015 6:44 PM
To: Bastek, Brian
Subject: RE: Grenada Public Meeting Sept 1st

Let's do 3 EST

From: Bastek, Brian [mailto:Bastek.Brian@epa.gov]
Sent: Monday, August 24, 2015 1:51 PM
To: Ellis, John <John.Ellis@arcadis-us.com>
Subject: RE: Grenada Public Meeting Sept 1st

John,

3 EST is ok on this end. Someone who I thought might be on the call and had a conflict at that time isn't working tomorrow so we are good to go. Just let me know either way. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [mailto:John.Ellis@arcadis-us.com]
Sent: Monday, August 24, 2015 10:21 AM
To: Bastek, Brian
Subject: RE: Grenada Public Meeting Sept 1st

Hey Brian – Can you move the meeting a little later? I am booked with calls from 11:30 to 1:30 CST. 2CST would work great from me.

I'll get the potential posters over to you.

John

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Monday, August 24, 2015 9:18 AM
To: Ellis, John <John.Ellis@arcadis-us.com>
Subject: Grenada Public Meeting Sept 1st

Hi John. Hope your weekend was good.

I would like to have a conference call with you and a few folks on my end to discuss some details for this meeting. Can you do a call tomorrow afternoon around 1pm EST? Also, can you send a proof of what posters you were working on for the meeting? Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

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Pressley, Miriam

From: Bastek, Brian
Sent: Monday, August 24, 2015 2:51 PM
To: Ellis, John
Subject: RE: Grenada Public Meeting Sept 1st

John,

3 EST is ok on this end. Someone who I thought might be on the call and had a conflict at that time isn't working tomorrow so we are good to go. Just let me know either way. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]
Sent: Monday, August 24, 2015 10:21 AM
To: Bastek, Brian
Subject: RE: Grenada Public Meeting Sept 1st

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John

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
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Pressley, Miriam

From: Bastek, Brian
Sent: Monday, August 24, 2015 10:38 AM
To: Ellis, John
Subject: RE: Grenada Public Meeting Sept 1st

How about 11 EST?

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]
Sent: Monday, August 24, 2015 10:21 AM
To: Bastek, Brian
Subject: RE: Grenada Public Meeting Sept 1st

Hey Brian – Can you move the meeting a little later? I am booked with calls from 11:30 to 1:30 CST. 2CST would work great from me.

I'll get the potential posters over to you.

John

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Monday, August 24, 2015 9:18 AM
To: Ellis, John <John.Ellis@arcadis-us.com>
Subject: Grenada Public Meeting Sept 1st

Hi John. Hope your weekend was good.

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bastek.brian@epa.gov

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Pressley, Miriam

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Sent: Monday, August 24, 2015 10:18 AM
To: Ellis, John
Subject: Grenada Public Meeting Sept 1st

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Brian Bastek
Environmental Engineer
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Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 21, 2015 2:30 PM
To: Melissa_Collier@deq.state.ms.us
Subject: RE: Grenada Mfg LLC Outreach Next Week
Attachments: Mat'l from Ms Zmitrovich_at_MSDEQ.pdf

As promised. Enjoy! Good to see you this week. Thanks again for your help in the field.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Melissa_Collier@deq.state.ms.us [mailto:Melissa_Collier@deq.state.ms.us]
Sent: Friday, August 14, 2015 9:35 AM
To: Holtzclaw, Brian
Cc: Anderson, Meredith; Bastek, Brian; Newman, Keriema
Subject: RE: Grenada Mfg LLC Outreach Next Week

Hey Brian,

One of my staff members used to work for the Health Dept. She provided me with the following contact:

Diane Hargrove, District Administrator
662-563-5603

This is the number in her Batesville office. Some days she works out of Greenwood.

Melissa McGee-Collier, Director
Office of Community Engagement
Small Business Ombudsman

PO Box 2249
Jackson, MS 39225

700 North State Street
Jackson, MS 39201

Phone: 601-961-5025
Cell: (601) 662-1111

From: "Holtzclaw, Brian" <Holtzclaw.Brian@epa.gov>
To: "Melissa_Collier@deq.state.ms.us" <Melissa_Collier@deq.state.ms.us>, "Bastek, Brian" <Bastek.Brian@epa.gov>, "Anderson, Meredith" <Anderson.Meredith@epa.gov>, "Newman, Keriema" <Newman.Keriema@epa.gov>
Cc: "Bastek, Brian" <Bastek.Brian@epa.gov>, "Anderson, Meredith" <Anderson.Meredith@epa.gov>, "Newman, Keriema" <Newman.Keriema@epa.gov>
Date: 08/13/2015 03:42 PM
Subject: RE: Grenada Mfg LLC Outreach Next Week

Melissa:

Thanks. Do you have a contact at the MS Dept. of Health that we can update and reach out to as well, if so, please share. We have updated Carl Blair of ATSDR, our sister federal health agency on these matters. Thanks.

Brian L. Holtzclaw, Community Engagement Coordinator

U.S. EPA, Resource Conservation and Restoration Division

holtzclaw.brian@epa.gov

404-821-0697 (work cell); 404-562-8684 (desk)

From: Melissa_Collier@deg.state.ms.us [mailto:Melissa_Collier@deg.state.ms.us]

Sent: Thursday, August 13, 2015 12:12 PM

To: Holtzclaw, Brian

Cc: Bastek, Brian; Anderson, Meredith

Subject: Re: Grenada Mfg LLC Outreach Next Week

Ok great! See you next week.

"And let us not be weary in well doing: for in due season we shall reap, if we faint not." Galatians 6:9

On Aug 13, 2015, at 10:53 AM, Holtzclaw, Brian <Holtzclaw.Brian@epa.gov> wrote:

We have a green light from management, looking forward to working with MDEQ next week !

From: Holtzclaw, Brian

Sent: Wednesday, August 12, 2015 6:57 PM

To: Melissa_Collier@deg.state.ms.us

Subject: Re: Grenada Mfg LLC Outreach Next Week

Thank you kindly !

Sent from my iPhone

On Aug 12, 2015, at 6:45 PM, "Melissa_Collier@deg.state.ms.us" <Melissa_Collier@deg.state.ms.us> wrote:

Got it. Thanks for the updates. My staff and I will offer any necessary support on this project for outreach activities.

Thanks

"And let us not be weary in well doing: for in due season we shall reap, if we faint not." Galatians 6:9

On Aug 12, 2015, at 5:40 PM, Holtzclaw, Brian <Holtzclaw.Brian@epa.gov> wrote:

Melissa:

Thanks for our great conversation today about our upcoming Grenada Mfg LLC outreach. As promised, here is our communications strategy, which should help fill in the blanks for you.

Also, thanks for volunteering yourself and your MDEQ outreach staff to potentially assist us next week, in light of helping us with conducting critical outreach and filling in some apparent staffing gaps. I will be getting with my management to get their approval on your generous MDEQ offer to assist us from Tuesday, Aug. 18th at 4:30 to Thursday, Aug. 20th at 9:30am (yourself); as well as Thursday, Aug. 20th at 9:30 to COB (Gloria Tatum and Cassandra Johnson). As indicated, if we assess by Wednesday that a second outreach crew is not needed, we can relay that.

The attachment shows our preparatory work and initial field activities (#17 and #18), as well as the big picture. For the ~ 85 homes in and near Eastern Heights, we will need to: distribute the fact sheet, convey key messages, answer key questions (to the best we can), encourage participation by the neighborhood to attend the upcoming planned Sept. 1 "Meet and Greet" (with EPA/MDEQ/Permittee/Consultant), as well as achieve signed access agreements for household VI sampling (from the targeted homes on the southern edge of the community).

When I get an answer from my management, I will get back to you. We will be happy to have a conference call to bring you all more up to speed, as needed. The facility's workplan should be finalized shortly, we just got our risk assessor's comments in during the past hour and we can forward that, as well as outreach materials as well. **Thanks again.**

Brian L. Holtzclaw, Community Engagement Coordinator

U.S. EPA, Resource Conservation and Restoration Division

holtzclaw.brian@epa.gov

404-821-0697 (work cell); 404-562-8684 (desk)

<Communications Strategy - Vapor Intrusion Phase I Sampling - Grenada Mfg RCRA facility - Rev 5
081215.docx>

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 21, 2015 2:28 PM
To: Newman, Keriema
Subject: FW: Eastern Heights Sample Agreements
Attachments: Grenada draft access letter and consent form August 2015_final.pdf

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Bastek, Brian
Sent: Wednesday, August 19, 2015 9:29 AM
To: 'Reid Stanford'; Marquette Wolf
Subject: RE: Eastern Heights Sample Agreements

Reid,

Attached is our access letter and agreement form that I will finalize and mail to each house once they are executed. The EPA will provide the final VI work plan once it is received and approved. In addition, you stated you would be willing to share any data you had collected up to this point. Please let me know when I can expect to see that data. Thank you.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Reid Stanford [<mailto:reidstanford@gmail.com>]
Sent: Tuesday, August 18, 2015 12:56 PM
To: Bastek, Brian; Marquette Wolf
Subject: Eastern Heights Sample Agreements

Dear Brian:

This email is intended to capture the elements we discussed this morning concerning samples that will be taken from Eastern Heights. We will need to agree on the following items:

1. EPA will provide my firm with a sampling plan 10 days prior to the date the plan is to begin;

2. EPA will allow us to split the samples while they are being taken by the Permitted Party;
3. The Firm will identify the entity that will be conducting the testing on behalf of the residents once the sampling plan has been received by The Firm;

With this we feel we will be able to assist EPA in getting full access to the homes identified to be tested. These homes include the first six homes along the southern boundary of Eastern Heights Subdivision. Please let me know if you need anything further.

Sincerely,

Reid Stanford

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 21, 2015 11:08 AM
To: Ellis, John
Subject: RE: VI Inspection Video
Attachments: Grenada draft access letter and consent form August 2015_final.docx; Grenada Fact Sheet #1_Aug 2015_FINAL.pdf

Hi John. Please see attached. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [mailto:John.Ellis@arcadis-us.com]
Sent: Friday, August 14, 2015 5:28 PM
To: Bastek, Brian
Subject: RE: VI Inspection Video

Thanks Brian.

Please send along the fact sheet and generic access agreements when they are available.

John

From: Bastek, Brian [mailto:Bastek.Brian@epa.gov]
Sent: Friday, August 14, 2015 3:29 PM
To: Ellis, John <John.Ellis@arcadis-us.com>
Subject: VI Inspection Video

https://www.youtube.com/watch?v=a8FR2oN_DLU

Brian Bastek
Environmental Engineer
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Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, August 19, 2015 9:30 AM
To: Reid Stanford;Marquette Wolf
Subject: RE: Eastern Heights Sample Agreements
Attachments: Grenada draft access letter and consent form August 2015_final.pdf

Reid,

Attached is our access letter and agreement form that I will finalize and mail to each house once they are executed. The EPA will provide the final VI work plan once it is received and approved. In addition, you stated you would be willing to share any data you had collected up to this point. Please let me know when I can expect to see that data. Thank you.

Brian Bastek
Environmental Engineer
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RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Reid Stanford [<mailto:reidstanford@gmail.com>]
Sent: Tuesday, August 18, 2015 12:56 PM
To: Bastek, Brian; Marquette Wolf
Subject: Eastern Heights Sample Agreements

Dear Brian:

This email is intended to capture the elements we discussed this morning concerning samples that will be taken from Eastern Heights. We will need to agree on the following items:

1. EPA will provide my firm with a sampling plan 10 days prior to the date the plan is to begin;
2. EPA will allow us to split the samples while they are being taken by the Permitted Party;
3. The Firm will identify the entity that will be conducting the testing on behalf of the residents once the sampling plan has been received by The Firm;

With this we feel we will be able to assist EPA in getting full access to the homes identified to be tested. These homes include the first six homes along the southern boundary of Eastern Heights Subdivision. Please let me know if you need anything further.

Sincerely,

Reid Stanford

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 14, 2015 4:08 PM
To: Ellis, John
Subject: Grenada Borings Figure
Attachments: Grenada_Borings_Update.pdf

FYI

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

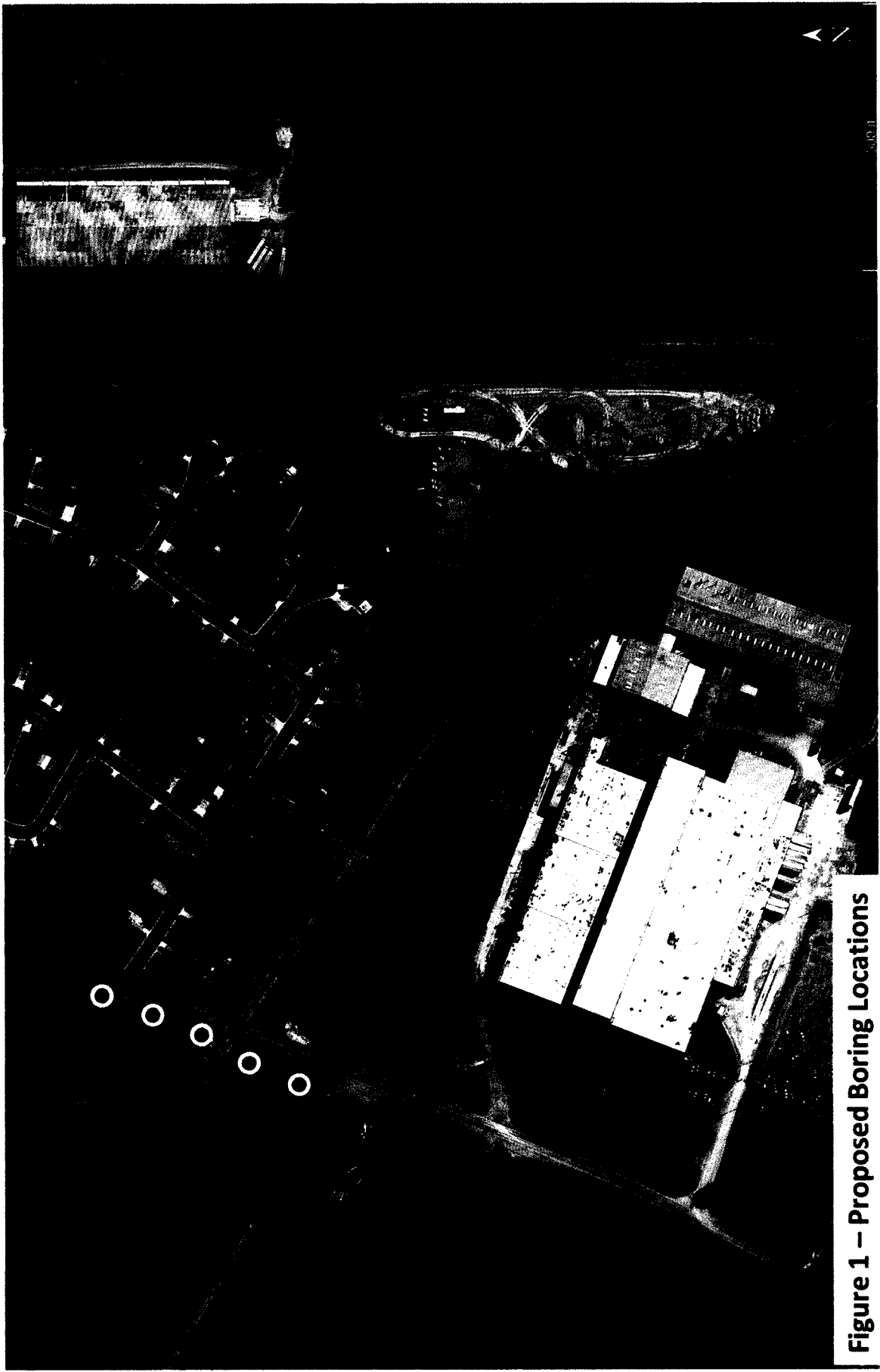


Figure 1 – Proposed Boring Locations

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 14, 2015 11:21 AM
To: Ellis, John
Cc: Anderson, Meredith
Subject: RE: Grenada Call

OK, we'll call you then.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]
Sent: Friday, August 14, 2015 10:37 AM
To: Bastek, Brian
Subject: RE: Grenada Call

Brian – That would work for me.

John

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Friday, August 14, 2015 9:07 AM
To: Ellis, John <John.Ellis@arcadis-us.com>
Subject: RE: Grenada Call

Hi John. Meredith isn't available right now so maybe around 12 EST? Comments are on the way...

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]
Sent: Friday, August 14, 2015 10:06 AM

To: Bastek, Brian
Subject: Grenada Call

Hey Brian – Do you think we will be having a call this morning? Also, send over the comments when you get a chance.
Thanks,
John

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

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Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 14, 2015 10:09 AM
To: Ellis, John
Subject: FW: Grenada Workplan Comments
Attachments: IMWP_HH_draft.docx

Please see attached draft comments from Ofia. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 4

61 Forsyth Street, S.W.
Atlanta, Georgia 30303

MEMORANDUM

August 12, 2015

SUBJECT: Review of Interim Measures Work Plan
Vapor Intrusion Assessment
Grenada Manufacturing LLC
Grenada, Mississippi

FROM: Ofia Hodoh
Technical Services Section
Resource and Scientific Integrity Branch

TO: Brian Bastek, Corrective Action Specialist
RCRA Division

THROUGH: Glenn Adams, Chief
Scientific Support Section
Superfund Support Branch

Per your request, I have reviewed the Interim Measures Work Plan for **Grenada Manufacturing**, located in Grenada, MS. My review has focused on the human health risk aspects of the document prepared by ARCADIS, as it pertains to vapor intrusion sampling.

SPECIFIC COMMENTS:

1. **Scope of Work, p.2.** The author has made several statements in the workplan that "If the evaluation indicates that the VI pathway is incomplete, additional evaluation is not warranted". EPA recommends that any determination that the vapor intrusion pathway is incomplete be supported by site-specific evidence to

demonstrate that the nature and extent of vapor-forming chemical contamination in the subsurface has been well characterized. Ideally, where groundwater is the source of vapors, the plume has been shown to be stable or shrinking to establish that the potential for vapor intrusion to pose a health concern will not increase in the future (USEPA, 2015e; ITRC, 2007). Continued investigations to delineate the areal extent of a subsurface vapor plume would be prudent. If the supplemental groundwater and/or soil gas data indicate that the plume is migrating toward the residential neighborhood, a completed human exposure pathway exists, and additional paired ambient air with indoor air sampling may be warranted.

2. **Reconnaissance of Structures, p.4.** EPA recommends that part of the reconnaissance efforts include identification of residents to determine if women of reproductive age (or known pregnancy status) live at the six properties along Lyon Drive.
3. **Laboratory Analysis, p.7.** Due to the time-sensitive nature of this sampling effort and potential TCE vapor exposures inside the home, the responsible party should prioritize rapid turn-around-time for the analysis of preliminary results and the final QA/QC results.
4. **Laboratory Analysis, p.7.** Please ensure that the work to be conducted in this investigation and the associated data quality objectives can support the vapor intrusion evaluation. Specifically, the lab should ensure that detection limits for the COPCs are sufficient for VISL screening (USEPA, 2015f).
5. **Data Evaluation and Reporting, p. 7.** The author indicated that data would be evaluated against EPA's OSWER indoor air background studies report (USEPA, 2011a). EPA Region 4 requests that the author revise the text and discuss the background report as an uncertainty. Specifically, address the limitations of the report and its interpretation recognizing that no locations from the southeastern U.S. were represented in the study and the findings may not be generalizable to Grenada, Mississippi. Although published background levels are helpful in interpreting indoor and outdoor air data, site-specific background data are preferred in allowing for quantitative comparisons and are one tool used in a multiple-lines-of-evidence approach to data evaluation and decision-making.
6. **Data Evaluation and Reporting, p. 7.** The report should indicate a communication plan of results to the six homeowners? What contingency plans are in place to

inform the homeowner(s) if TCE vapor intrusion levels exceed the EPA Region 4 Removal Management Level of 2 ug/m³ (homes with pregnant women or women of childbearing age present) or 6.3 ug/m³ (homes without sensitive subpopulations)?

Recommendations/Action Plan

- ✓ The work plan should be modified to include SSS's recommendations.

If I can be of any further assistance or if you have any questions, please call me at 404 562 9176.

References:

Interstate Technology and Regulatory Council (ITRC). 2007. Vapor Intrusion Pathway: A Practical Guideline. VI-1. Washington, D.C.: Interstate Technology & Regulatory Council, Vapor Intrusion Team. www.itrcweb.org/Documents/VI-1.pdf

U.S. EPA, 2011a. Background Indoor Air Concentrations of Volatile Organic Compounds in North America Residences (1990 – 2005): A Compilation of Statistics for Assessing Vapor Intrusion, EPA 530-R-10-001, June 2011.

U.S. EPA, 2012c. Superfund Vapor Intrusion FAQs. February 2012.
[http://www.epa.gov/superfund/sites/npl/Vapor Intrusion FAQs Feb2012.pdf](http://www.epa.gov/superfund/sites/npl/Vapor%20Intrusion%20FAQs%20Feb2012.pdf)

U.S. EPA, 2015e. OSWER Technical Guide for Assessing and Mitigating The Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air. Office of Solid Waste and Emergency Response, OSWER Publication 9200.2-154, June 2015.
<http://www.epa.gov/oswer/vaporintrusion/documents/OSWER-Vapor-Intrusion-Technical-Guide-Final.pdf>

U.S. EPA 2015f. OSWER Vapor Intrusion Assessment, Vapor Intrusion Screening Levels, Version 3.4, June 2015, found at EPA's Vapor Intrusion Website, www.epa.gov/oswer/vaporintrusion/

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, August 14, 2015 10:07 AM
To: Ellis, John
Subject: RE: Grenada Call

Hi John. Meredith isn't available right now so maybe around 12 EST? Comments are on the way...

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [mailto:John.Ellis@arcadis-us.com]
Sent: Friday, August 14, 2015 10:06 AM
To: Bastek, Brian
Subject: Grenada Call

Hey Brian – Do you think we will be having a call this morning? Also, send over the comments when you get a chance.
Thanks,
John

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

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Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, August 13, 2015 11:12 AM
To: Ellis, John
Subject: FW: Grenada City Hall Auditorium

Hi John.

EPA would like Arcadis to participate in the public meet and greet session now confirmed for September 1, 2015. Please reserve the facility today and provide some light refreshments as requested below. Give me a call today to discuss.

Thank you.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Holtzclaw, Brian
Sent: Tuesday, August 11, 2015 4:59 PM
To: Bastek, Brian
Cc: Newman, Keriema
Subject: RE: Grenada City Hall Auditorium

Brian:

Before officially reserving, please let me let the n'hood de facto leaders weigh in on location on tomorrow's call.

FYI, if we go with this location --- the reservation is made with Keondria or Roshell Purnell, for Grenada City Auditorium at 662-227-1042 or 662-226-8895. \$100 deposit and \$150 for rental.

We will need it for Sept 1 (Keondria said it is currently available), from 4:30 (to allow for set-up); then actual open house is suggested and forecast for 5:30 to 8 pm. May have hybrid, such as allow for a short public meeting/Q & A format in later time segment.

Will also like their firm to pay for refreshments, food for that evening.

Brian

Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, August 12, 2015 8:44 AM
To: O'Connor, David A.
Cc: Anderson, Meredith
Subject: RE: Grenada GW Data

That should work for us. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Wednesday, August 12, 2015 6:59 AM
To: Bastek, Brian
Subject: RE: Grenada GW Data

Brian:

I am available from 2:30-4:30pm Thursday (tomorrow) to talk if this works for you and Meredith.

MERITOR

David A. O'Connor
Corporate Environmental Manager
Treasury Department
248.435.2706 tel
248.435.8354 fax
david.oconnor@meritor.com (b)(6)

Meritor, Inc.
2135 West Maple Road, B-146A
Troy, Michigan 48084
USA
www.meritor.com

From: Bastek, Brian [mailto:Bastek.Brian@epa.gov]
Sent: Tuesday, August 11, 2015 5:15 PM
To: O'Connor, David A.
Subject: Grenada GW Data

Hi Dave. Hope things are well with you. Do you have some time on Thursday to have a quick call with Meredith and I?

Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
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61 Forsyth Street, SW
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Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 11, 2015 5:15 PM
To: O'Connor, David A.
Subject: Grenada GW Data

Hi Dave. Hope things are well with you. Do you have some time on Thursday to have a quick call with Meredith and I?

Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 11, 2015 4:45 PM
To: Gaston, Willie
Subject: Grenada 2012 Report Comment Letter
Attachments: 2012 Annual Monitoring Report comments_BAB.docx

Hi Willie. Can you please prepare this letter for mailing? Thank you.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Via Certified Mail – Return Receipt Requested

Grenada Manufacturing, LLC
c/o Mr. Donald Williams
635 Highway 332
Grenada, Mississippi 38901

Subject: Review of 2012 Annual Monitoring Report
Grenada Manufacturing, LLC
Grenada, Mississippi
MSD 007 037 278

Dear Mr. Williams:

The 2012 Annual Monitoring Report was submitted to the U.S. EPA in accordance with the 2010 Hazardous and Solid Waste Amendments (HSWA) permit for the Grenada Manufacturing, LLC site, located in Grenada, Mississippi. The EPA has reviewed this report and offers the attached comments for the preparation of the 2013 and 2014 reports.

Please review the attached comments and incorporate these modifications, in addition to the other information requested, into the 2013 and 2014 annual reports. The 2012 Annual Monitoring report should not be revised as most comments refer to conclusions and recommendations rather than format.

Thank you for your cooperation on this project as we work to develop a better understanding of site characteristics, contaminant fate and transport, and remediation effectiveness. I am available to discuss these comments with you, so please don't hesitate to contact me at 404-562-8511 or bastek.brian@epa.gov if you have any questions.

Sincerely,

Brian Bastek
Corrective Action Project Manager
RCRA Corrective Action and Permitting Section

cc: Carla Brown, MDEQ

EPA Comments on the
2012 Annual Monitoring Report
Grenada Manufacturing, LLC
Grenada, Mississippi

August 11, 2015

GENERAL COMMENTS

1. The site-wide concentration contours of Chlorinated Volatile Organic Compounds (CVOCs) in the upper aquifer (Figures 3-7 through 3-10) are not properly interpreted and are not consistent with the CSM. The contours should be extended downgradient of the PRB where significant contamination is still present. As currently drawn, the figures give the false impression that the plume terminates at the PRB. Within the upgradient portion, contours of high concentration (e.g., 50,000 ug/L) are drawn in a way that implies a single, highly concentrated, and elongated hot spot area extending across the plume from near the main plant building to the Riverdale Creek, which is not consistent with the CSM. The revised CSM in Appendix E states that multiple discrete source areas downgradient of the primary sources near the main plant caused the plume to disperse to the west. Individual monitoring well data also support the CSM that there are multiple discrete source areas rather than one very high and elongated hot spot extending from east to west. In addition to the concentration contours in plan view, vertical cross sections showing vertical contaminant distribution along a few transects across the plume would be beneficial. It is recommended that the contours be revised to correctly show discrete hot spots, be extended downgradient of the PRB, and the lowest contour be the respective MCL of each CVOC. It is also recommended that select cross-sections be included showing the vertical distribution of CVOCs.
2. As discussed in Section 3.8 of the Annual Report, the current sampling protocol was evaluated during the fall 2012 sampling event, and some concerns were identified regarding the representativeness of samples collected with a bailer following the standard three-pore volume purging method used until Spring 2012. The sampling method used during the CY2012 and previous annual monitoring events may have been problematic because samples were not representative of aquifer conditions due to inadequate purging, as demonstrated by the sharp variation between the Spring (comprehensive) and Fall (a select sub-set of wells) sampling results. As stated in the report, some of the variable data obtained from wells in the past may be related to this issue. This issue should be resolved prior to continuing with the current sampling program. An appropriate sampling protocol should be developed so that year-to-year comparison of results and trend analysis are meaningful. It is recommended that the facility conduct test sampling using both bailer and low-flow sampling method to develop a comparison of the two methods at a few select wells. Seasonal variations of groundwater levels between spring and fall should be considered in the evaluation. Ideally, the baseline comparison among alternative sampling methods should be conducted within a short span of time to minimize variables. If the May 2012 sampling results are not representative of actual aquifer conditions, the facility should not wait until the next quadrennial sampling in 2016 for another comprehensive monitoring using the flow-flow sampling protocol for all wells.

It is recommended that Grenada evaluate the monitoring program following a comprehensive baseline sampling, and develop a new sampling protocol using the most representative sampling method.

SPECIFIC COMMENTS

Section 1.4, Page 1-11, Site Conceptual Model

1. The generalized cross section included is the same as the one included in the prior year's report; it has not been updated based on the updated CSM that is presented in Appendix E. In particular, the cross section does not show the discontinuous intermediate clay layer that separates the Upper Aquifer in shallow and deep zones in the eastern portion of site but is absent near Riverdale Creek. The figure also shows the water table to coincide with the boundary between the upper silty clay and the Upper Aquifer, whereas the CSM and modeling states that the water table is always within the Upper Aquifer, and that the silty clay does not affect the groundwater flow characteristics. It is recommended that Grenada update the CSM and figures to be consistent with the updated CSM presented in Appendix E.

Section 1.5, Page 1-11, Report Organization

2. The summary of findings of the monitoring program should be followed by an outline of recommended changes to the monitoring program based on the findings from the CY2012 monitoring results. No recommendations are included following the list of findings in Section 4. It is recommended that Grenada revise the next Annual Report to include a separate section providing recommendations to modify the monitoring program based on the findings.

Section 2.1, Page 2-1, Groundwater Sampling

3. The summary of the groundwater sampling method implies that all sampling was conducted following the same protocol as established in the documents cited. According to Section 3.8, the sampling protocol for groundwater samples collected during the semi-annual sampling of select wells in October 2012 was different from the method followed during the comprehensive quadrennial sampling conducted in May 2012. Grenada should revise the Annual Report to discuss the sampling protocol as outlined in the revised QAPP, and any subsequent amendment to the QAPP to conduct low-flow sampling during October 2012.

Section 2.2, Page 2-1, Summary of Statistical Analysis

4. This section describes the statistical analysis conducted to comply with the facility permit. However, no background information is provided on the purpose of this analysis and why it is mandated. Provide further information on site conditions that triggered the need for the statistical analysis in the context of the facility permit, with details such as the purpose of the evaluation, and the chemicals or concerns (COCs) to be evaluated.

Section 3.1 Page 3-1, Groundwater Flow

5. As demonstrated by the contours in Figures 3-1 and to a lesser extent Figure 3-2, the hydraulic gradient is quite flat in the main plant area, with a sharp increase near Riverdale Creek. To more accurately assess the flow pattern across the site, it is recommended that Grenada revise the next Annual Report to provide separate estimates of hydraulic gradient and groundwater velocity are needed for the eastern part of the site, and for the area upgradient of the PRB. Also, the next Annual Report should be revised to discuss if flow rates in the deep zone are expected to be similar to the shallow zone.

Section 3.2.1.1, Page 3-2, Volatile Organic Compounds

6. The text in this section only provides a qualitative assessment of VOCs. The 2012 values of VOCs are qualitatively compared to past detections; however, none of the trend charts included in Appendix C are referred to support the discussion. The text should provide a more quantitative assessment by citing the range of concentrations measured in spring and fall of 2012 and historical concentrations with references to trend charts. Revise the next Annual Report accordingly.

Section 3.5, Page 3-5, Surface Water Results

7. This section summarizes the surface water sampling results with the data presented in Table 3-7. However, no figure is referenced. Include a map showing the locations of the surface water samples that are listed in Table 3-7. The document should include a reference to Figure 2-2 for the surface water sample locations.

Section 3.8, page 3-7, Evaluation of Monitoring Programs

8. As outlined in General Comment #3, a comprehensive baseline sampling event using concurrent bailer and low-flow sampling is needed prior to permanently shifting to the low-flow sampling protocol. Otherwise, comparison of sampling results using low-flow method with historical results using bailers will provide misleading conclusions. Grenada should develop a new sampling plan following the recommendations outlined in General Comment #3.

Section 4, Page 4-1, Summary of Findings

9. The bulleted list on this page includes a bullet on MCL exceedance of metals concentrations in wells downgradient of the PRB; however, there is no bullet summarizing the CVOC concentrations exceedances downgradient of the PRB. Include a second bullet to describe all CVOCs that still exceed MCLs downgradient of the PRB.
10. The summary bullet in this section states that VOCs in surface water have reduced below MCLs and remain below MCLs in 2012. Section 3.5.1 states that cis-1,2-dichloroethylene exceeded MCL at one location in Fall 2012. Please clarify this discrepancy.

APPENDIX E

Section 2.2.2.2.2, Page 2-11 Hydrogeology in the Upper Aquifer

11. The text provides a detailed account of the numerical ranges of hydraulic gradient, porosity, and hydraulic conductivity. However, it fails to state what the range of resulting groundwater value is in feet per day. It is recommended that Appendix E be revised to provide estimates of groundwater flow rates in feet per day. If the values are not consistent with those reported in Section 3.6 of the Annual 2012 Report, the document should explain the discrepancy. The document provides a range of time estimate of the gravel time from AOC A to the Riverdale Creek, but does not provide details on how this range was estimated. Revise the document to clarify how the range was estimated, and if the travel time from AOC A to Riverdale Creek takes into account the variability of the hydraulic gradient across the distance over which the travel time is estimated.

Section 2.3.2, Page 2-14, Contaminant Transport

12. The text in this section states that the gradient reversal has been observed as far east as the PRB, and that this could have resulted in the spread and widening of the plume. Temporary gradient reversal over a short distance is not likely to have caused any significant impact on the overall spread and widening of the plume. The next Annual Report should be revised to provide details regarding observed gradient reversal to support the hypothesis that gradient reversal could contribute to the widening of the plume.

Section 2.3.2.1, Page 2-15, SWMU 2: Equalization Lagoon

13. The statement that continuing transport of CVOCs of approximately the same concentration would occur at the rate of advective groundwater flow is not clear. A more accurate narrative would be that after the CVOCs released from the Equalization Lagoon initially reached the Creek, continuing transport CVOCs would result in a constant mass flux at the Creek as approximately the same concentration of CVOCs would be released from the Equalization Lagoon while it was in operation. Revise the text to clearly describe the process of continuing mass transport from the Equalization Lagoon to the Riverdale Creek.

Section 3.3, Page 3-3, Groundwater Monitoring Near the PRB

14. The discussion of concentrations in monitoring wells near the PRB in this section contradicts the information presented in Section 2.3.3. The text here states that concentrations at MW-41 dropped below MCLs in 2010. However, Section 2.3.3 stated that the most recent monitoring data show approximately 8.5 mg/L total VOCs in MW-41, which is several orders of magnitudes higher than the respective MCLs of the three main CVOCs. Revise the text to clarify this discrepancy.
15. The document includes a thorough evaluation of flow around and through the PRB, However, no discussion of the estimated residence time of contaminated groundwater

passing through the PRB is provided. The residence time is a critical factor in evaluating the performance of a PRB (http://www.epa.gov/tio/download/rtdf/2-prbperformance_web.pdf). The estimate of contaminant resident time should be included as part of the overall hydraulic evaluation of the PRB.

16. The conclusion that the PRB panels appear effective in treating groundwater based on geochemical environment and generally low concentrations within the PRB is not supported by the discussion presented in this section. Only the data from the northern transect can be considered to support this conclusion. However, the upgradient concentration also declined after the installation of the PRB due to the effect of various source area treatments and removal actions implemented. Therefore, the concentration decrease cannot be solely attributed to the performance of the PRB. The next Annual Report should be revised to account for other contributing factors that have resulted in an overall decrease of groundwater contamination both up and downgradient of the PRB.

Section 3.4, Page 3-5, Water Level Monitoring Near PRB

17. The primary reason that PRB walls typically have higher permeability than the aquifer is because otherwise the PRB would not be able to accommodate the required flow and groundwater will bypass the PRB, and not because minimal impact to aquifer hydraulics is desired. The next Annual Report should be revised to accurately explain why PRB permeability should be higher than the surrounding aquifer material.

Section 4.1.1, In Situ Slug Testing

18. The *in-situ* slug testing of the slurry breakdown wells has produced valuable information and insight to the PRB hydraulics. The test results indicate that, currently, the conductivity of the PRB is in the same order of magnitude as that of the aquifer. However, the conductivity of the PRB after the 2005 installation was higher based on the water level graphs in Figures 3-7 to 3-10. The next Annual Report should be revised to include to state that the permeability of the PRB was likely higher soon after PRB installation.
19. Appendix E does not include a comparison of water levels measured in breakdown wells and in-walls. This evaluation would provide further insight into the PRB hydraulics. Provide a comparison of water levels measured in the slurry breakdown wells vs in-wall wells.

Section 4.1.2.3, Page 4-5, PRB Gradient Analysis

20. The analysis presented in this section is relevant to the information provided in Section 3.4 regarding water level monitoring near the PRB. Therefore, a combined and comprehensive analysis of gradients across the PRB would be better than having two different sections presenting and discussion the same general information. Grenada should consider revising Appendix E to include all data and interpretation regarding hydraulic gradient across the PRB in one section.

Section 4.2.1.4, Page 4-13, Solid Analysis

21. This section describes the results of grain size analysis and iron content analysis of core samples from the PRB. The discussion, however, does not provide any comparison of the results compare with typical ZVI PRB material. The text also does not address whether similar analyses were during the design and installation of the PRB. It is recommended that Grenada revise the next Annual Report to discuss how the grain size analysis and iron content of the PRB core samples compares with typical ZVI PRB material, and if there are any grain size analysis and iron content data available from the PRB installation phase for comparison.

Section 4.2.3, Page 4-19, Column Reactivity Measurement

22. As stated in the text, the intended performance of the PRB was to provide direct iron-catalyzed degradation of CVOCs. However, the investigation indicates that the only microbial degradation is taking place, which is not the intended mechanism. Comparable half-lives from column tests does not mean that the outcomes are comparable, as VC is not the intended final breakdown product. The assessment implies that the increased microbial population at the front face is accountable for most of the degradation within the PRB. The evidence of biodegradation, which is also occurring in the aquifer even outside of the PRB, is not justification enough to conclude that the PRB is performing well. Section 4.2.1.5 had stated that “the biological analysis of the PRB core suggest that microbial growth can be an added benefit, provided that the bacteria do not adversely impact the hydraulics or the performance of the PRB; however, the data suggest that such adverse hydraulic impacts may be occurring as a result of microbial growth.” It is recommended that Grenada revise the discussion in the next report to further address these issues and provide stronger justification for the conclusion that the PRB is still performing well despite the indication that microbial growth has negatively impacted the PRB hydraulics and there is limited evidence of any abiotic degradation.

Section 5.2, Page 5-2, Updates to the Groundwater Flow and Transport

23. This section provides a thorough description of the updates to the flow and transport model which demonstrates that not only was the model properly modified to incorporate the PRB, the hydrogeological characterization of the aquifer in the updated model is a significant improvement over the 2007 model. It is recommended that Grenada also address how the conductivity values assigned to the cells within the PRB compare with conductivity values from slug tests conducted in 2013.

Section 5.3, Page 5-5, Numerical Model Results

24. This section does not provide details of the flow calibration process or calibration statistics, mean residual, and root mean square of error. The calibration process and statistics are helpful in assessing model adequacy and reliability. Grenada should revise the next report to detail the calibration process, list the calibration statistics, and include a figure showing the observed head and modeled head distribution within the model domain.

The modeled hydraulic conductivity for the PRB is 0.1 feet/day, which is much lower than the conductivity values measured from the in-wall slug tests as discussed in Section 4.1.1, which were from 2 feet/day to 128 feet/day. Use of such low permeability and the resulting flow paths (as shown in Figure 5-12) contradict the conclusion presented later in Section 6.2 that states “The internal permeability of the PRB is somewhat higher than the permeability of the aquifer; therefore, the internal permeability of the PRB likely is not affecting flow through the PRB and the gradient conditions at and near the PRB.” According to the PRB testing results presented in Section 4, only the front face of the PRB now has a permeability that is lower than the aquifer material. A separate flow simulation would be beneficial to assess the performance of the newly-installed PRB with higher conductivity values prior to permeability reduction. Grenada should address this discrepancy and revise the model as necessary, and conduct alternative simulations of the PRB prior to and after permeability reduction at the front face of the PRB.

Section 5.4, Page 5-6, Contaminant Transport

25. Appendix E does not clearly address how the degradation of CVOCs within the PRB is modeled, which is critical in simulating the fate and transport of contamination migration through the PRB. Appendix E also does not discuss any qualitative calibration conducted to calibrate or adjust the input parameters of the fate and transport model. While the calibrated flow model has provided very useful information about the PRB hydraulics and performance, it appears that currently there are too many unknowns and assumptions to produce a reliable fate and transport model at this time. Grenada should revise the next Annual Report to address all model assumptions and limitations, and only use the flow model to support the overall PRB performance evaluation until a robust fate and transport model can be developed in the future.

Section 6.2, Page 6-1, PRB Evaluation

26. The second to last conclusion in this section states that “The environment within the PRB appears to remain reactive, and dechlorination occurs at a rate similar to the rate estimated for the PRB design.” This conclusion is based on degradation rates from laboratory column tests using core samples, not actual monitoring data from the PRB wall. The last conclusion states “biological reductive dechlorination at or near the ZVI interface appears to be the primary mechanism for dechlorination of chlorinated volatile organic compounds (CVOCs), as compared to abiotic dechlorination apparent in the pre-installation column studies.” However, in the absence of any abiotic degradation within the PRB, the biological reductive dechlorination that is limited to the ZVI interface at the front face of the PRB cannot result in similar rate of degradation to the one estimated during the PRB design. Grenada should consider revising these conclusions unless they can be supported by stronger evidence.

Section 6.3, Page 6-2, Fate and Transport Modeling

27. All four conclusions listed in Section 6.2 are based only on the flow model and particle tracking results, and not the fate and transport model results, as stated in Appendix E. The second conclusion “a significant portion of the total flux of impacted groundwater toward

Riverdale Creek still travels through the PRB and is treated effectively by the PRB” is only partially correct as the fate and transport model was not used to simulate the degradation of CVOCs within the PRB. Revise the text in the next report so that the conclusions accurately describe model simulations and results.

Section 6.5, Page 6-3, Additional Work to be completed in 2014

28. One of the main deficiencies of the PRB identified during the PRB evaluation effort was the lack of abiotic degradation within the PRB. Grenada should revise the discussion to indicate if there are any measures that can be recommended to restore abiotic breakdown of CVOCs within the PRB, which is the ultimate performance objective of the PRB.

Pressley, Miriam

From: Bastek, Brian
Sent: Monday, August 10, 2015 8:02 PM
To: Ellis, John
Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Sure, let me know what time works for you. Should I call your cell?

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]
Sent: Monday, August 10, 2015 6:49 PM
To: Bastek, Brian
Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Brian,

I am actually traveling to Atlanta tomorrow for a meeting with John and Meredith on Wednesday. Would you be open for a call midafternoon?

Thanks,
John

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Monday, August 10, 2015 3:03 PM
To: Ellis, John <John.Ellis@arcadis-us.com>
Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Hi John. I would like to discuss a few things regarding the VI study with you tomorrow. Please let me know when you might be available. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]

Sent: Tuesday, August 04, 2015 10:12 AM

To: Bastek, Brian

Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Good Morning Brian,

Attached is a clean copy of the IMWP (less the cover letter).

Please let me know if you need anything else.

Thanks,

John

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

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Professional Registration / PG-TX, # 4082 / PG-LA # 408

ARCADIS, Imagine the result

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]

Sent: Tuesday, August 4, 2015 8:09 AM

To: Ellis, John <John.Ellis@arcadis-us.com>

Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Hi John.

Thanks for getting the work plan into everyone on time. If you don't mind can you please email me a clean copy of the work plan. The one I received (attached) was scanned in and may be missing parts, especially with the figures. Thanks.

Brian Bastek

Environmental Engineer

U.S. EPA, Region 4

RCRA Corrective Action and Permitting Section

Resource Conservation and Restoration Division

61 Forsyth Street, SW

Atlanta, GA 30303

404-562-8511

bastek.brian@epa.gov

From: Don Williams [<mailto:dwilliams@iceindustries.com>]

Sent: Monday, August 03, 2015 5:34 PM

To: Bastek, Brian

Cc: Karp, Jeffrey M.; john.ellis@arcadis-us.com; David W. Nunn; Paul Bishop; Gary Houston

Subject: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Enclosed please find the Vapor Intrusion workplan requested in your letter of June 30, 2015. A hard copy was sent overnight. Thank you.

Don Williams

Ice Industries Grenada
635 Highway 332
Grenada, MS 38901
Phone 662.226.1161 ext 6113
Fax 662.226.1166

From: gsa [<mailto:administrator@iceindustries.com>]

Sent: Monday, August 03, 2015 3:24 PM

To: Don Williams

Subject: Attached Image

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John

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

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Sent: Monday, August 03, 2015 5:34 PM
To: Bastek, Brian
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Infrastructure · Water · Environment · Buildings

Mr. Donald Williams
Grenada Manufacturing, LLC
635 Highway 332
Grenada, Mississippi 38901

ARCADIS U.S., Inc.
10352 Plaza Americana Drive
Baton Rouge, Louisiana
Tel 225-292-1004
Fax 225-218-9677
www.arcadis-us.com

Subject:
Interim Measures Work Plan – Vapor Intrusion Assessment
Grenada Manufacturing, LLC, Grenada, Mississippi.
Permit No. MSD 007 037 278

ENVIRONMENTAL

Dear Mr. Williams:

ARCADIS is pleased to provide this Interim Measures Work Plan (IMWP) to Grenada Manufacturing, LLC (Grenada Manufacturing) for its facility located in Grenada, Mississippi (Site) detailing the proposed Vapor Intrusion (VI) Assessment. This IMWP has been prepared in response to the June 30, 2015 United States Environmental Protection Agency (USEPA) Region 4 letter to Grenada Manufacturing. The IMWP outlines screening, field work, laboratory analysis, data evaluation and reporting proposed for the scope of work, which will be conducted in accordance with *the USEPA OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (USEPA, June 2015).

Date:
3 August 2015

Contact:
John Ellis

Phone:
225-292-1004

Email:
john.ellis@arcadis-us.com

Background

During Site-wide groundwater investigation activities performed by T&M Associates Inc. (T&M), an elevated concentration of trichloroethylene (TCE) was detected in a groundwater sample collected from off-site Monitoring Well MW-20 during a May 2012 sampling event. T&M installed and sampled seventeen soil gas ports (VP-1 through VP-17) in 2013 to further investigate this area. An additional six (6) soil gas ports (VP-101, VP-103, VP108, VP-110, VP112, and VP-114) were installed and sampled by T&M during May 2014. The data and preliminary evaluation from the sampling was submitted to USEPA Region 4 in a letter dated January 17, 2014. Figure 1 depicts the sample locations in relation to the off-site monitoring well MW-20 assessment area. USEPA requested that Grenada Manufacturing prepare an IMWP to evaluate the potential VI pathway in the off-site area in a letter dated June 30, 2015.

Imagine the result

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Scope of Work

In an effort to evaluate the potential VI pathway in the off-site area, additional data will be collected. Samples collected will include:

- Soil gas;
- Ambient air;
- Indoor air from select residential buildings; and
- Sub-slab vapor from select residential buildings.

Additionally, a reconnaissance of any building where indoor air and sub-slab vapor samples will be collected will be conducted prior to sampling.

Details on the sampling procedures and data evaluations are provided below.

Any additional sampling beyond what is described in this IMWP will be based on the data evaluation. The evaluation will use the multiple lines of evidence (MLE) approach described in the *USEPA OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (USEPA, June 2015). If the evaluation indicates that the VI pathway is incomplete, additional evaluation is not warranted.

Soil Gas Assessment

ARCADIS proposes to install and sample eight (8) shallow soil gas ports as shown on Figure 1. These eight proposed off-Site locations will be installed in close proximity to the existing deeper soil gas ports (VP-2 through VP-6, VP-13, and VP-17), including the ones with the elevated TCE concentrations. A desktop review of the available soil borings and geological cross-sections show that an approximate 8 to 12 foot thick surficial clay layer underlain by a sand layer is present in this area. The existing soil gas ports with detected VOC concentrations were screened at the clay/sand interface or within the water-bearing sand layer. ARCADIS will use this data to evaluate the migration of concentrations detected in the previously installed soil gas ports.

Soil Gas Port Installation

A truck mounted Geoprobe® will be used to create an open borehole and a 2.25-inch diameter Macro-Core® sampler will be used to remove soil from the boring. As part of the reconnaissance, a utility locate will be requested to identify buried utilities in the vicinity of the structures and any proposed soil gas ports, prior to intrusive activities. Soil will be classified in the field and certain soil samples may be collected from select borings for soil moisture analysis. Each of the soil gas ports will be installed to a depth of six (6) feet below ground surface and will be screened from the 5.5 foot to 6 foot interval below ground surface. Soil gas ports will be constructed of 0.25-inch nylon tubing with 6-inch stainless steel screens. The screen will be installed with filter pack sand placed around the screen to 6-inches above the screen. Granular bentonite will be used to fill the remainder of the borehole above the screen filter pack to the surface and hydrated during installation. A protective cover will be installed at the surface. At the surface, the end of the tubing will be equipped with a Swagelok® fitting and a gas tight valve. Upon

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completion of the installation and sealing of each soil gas port, the volume of air in the sand pack will be calculated and approximately 3 times this volume of air will be purged using a low flow air sampling pump set at a rate of 100 milliliters per minute (ml/min).

Soil Gas Port Sampling

A minimum of 24 hours after installation, each soil gas port will be sampled using 1-liter polished stainless steel SUMMA[®] canisters with calibrated flow controllers that are cleaned and certified by the laboratory. The flow controllers will be calibrated for a sampling duration of 10 minutes (\approx 80 ml/min). Approximately one to three times the dead volume of air will be purged at a rate of 100 ml/min prior to sampling using a low flow air sampling pump. The amount and rate of dead volumes purged will be measured and recorded in the field and will remain consistent between sample locations. The sampling procedure consists of connecting the purge pump to the soil gas port, then turning it on, then opening the soil gas port valve to purge the tubing. At the completion of purging the valve on the soil gas port will be closed, the purge pump removed, and then the sampling canister and flow controller will be connected to the soil gas port. The sampling canister will be opened and then the valve on the soil gas port will be opened. At the completion of sampling, the canister will be closed first and then the soil gas port valve. A final canister vacuum between 2 and 5 inches of mercury will signify that sample collection is complete. At the completion of each sample collection, the Summa canisters will be closed and sealed with a brass Swagelok[®] cap.

Meteorological data (temperature, precipitation, humidity, barometric pressure, and wind speed/direction) will be collected before and during sampling activities.

Residential VI Assessment

In addition to the supplemental soil gas investigation, ARCADIS proposes to complete VI sampling at six (6) residential properties located on Lyon Drive (as shown on Figure 1). Work will be conducted in accordance with the *USEPA OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (USEPA, June 2015). The six residential structures on Lyon Drive have been selected based on their relative proximity to known groundwater impacts (MW-20) and potential soil gas impacts (VP-2, VP-3, VP-5, VP-6). Only four of these structures are within 100 feet of the known groundwater or potential soil gas impacts (as shown on Figure 1). The other two properties, east and west of the potentially impacted area, are being assessed as a conservative measure. At this time, no preferential pathways have been identified in the area of potential impacts.

Community Outreach

Prior to engaging property owners regarding the residential VI sampling, USEPA anticipates conducting an outreach meeting with potentially affected community members. The purpose of this meeting will be to disseminate information regarding the Site history, the constituents being assessed, vapor intrusion and the sampling process.

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Residential VI sampling will be contingent on USEPA obtaining approval and a signed access agreement from the property owners.

Reconnaissance of Structures

As recommended in USEPA guidance, prior to conducting sampling activities, a reconnaissance of the potentially affected structures will be performed. As appropriate, a visual inspection of the structure's interiors and exteriors will be performed to identify potential preferential pathways (such as utilities) to potential vapor migration into the structures and to identify any background sources or other factors that could affect the quality of indoor air. As part of the reconnaissance, information will be gathered from the homeowner on potential sources within each structure, ventilation systems, and building construction. Identified potential background sources will be removed from the structure during the VI sampling event. Samples collected from the residential structures will be given a unique identification to conceal the identity of the sample locations.

Review of the Grenada County Assessor records indicate that the houses along Lyon Drive are single story buildings with slab-on-grade construction (no basements) and are less than 1,500 square feet in size. Thus, paired indoor air and sub-slab sampling is recommended at each structure.

Indoor Air Sampling

Indoor air samples will be collected using 6-liter polished stainless steel SUMMA® canisters with calibrated flow controllers that are cleaned and certified by the laboratory. The canisters will utilize flow controllers calibrated for a 24-hour sample collection. During the collection process, the indoor air canister will be securely positioned at the breathing zone level for the most sensitive exposed population and located near the center of the structure. Since all six of the structures identified for the residential VI assessment are single story, slab-on-grade construction and are less than 1,500 square feet in size, one indoor air sample location is appropriate. All indoor air samples will be collected under normal home conditions. A final canister vacuum on the flow controller between 2 and 5 inches of mercury will signify that sample collection is complete. At the completion of sampling, the canister will be closed and the flow controller removed. The canisters will be gauged with an independent gauge and the final vacuum recorded. The canister will then be closed and sealed with a brass Swagelok® cap.

Meteorological data (temperature, precipitation, humidity, barometric pressure, and wind speed/direction) will be collected before and during sampling activities.

Ambient Air Sampling

Ambient air samples will be collected outdoors concurrently with indoor air samples to evaluate potential background contaminant sources from outside the structures. Ambient air samples will be collected using 6-liter polished stainless steel SUMMA® canisters with calibrated flow controllers that are cleaned and certified by the laboratory. The canisters will utilize flow controllers calibrated for a 24-hour sample collection. During the collection process, the sample canister will be securely

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positioned at breathing height (approximately 5 feet above the ground). It is anticipated that all structures will not be sampled at the same time. It is proposed that instead of collecting ambient air samples at each structure location, that ambient air samples be collected at strategic locations that cover multiple structures at once. One ambient air sample will be collected upwind of multiple groups of buildings. The location of the ambient air sample will be determined based on wind direction at the time of sampling and the forecasted wind direction.

The ambient air sample canister will be placed so as to minimize potential contamination from extraneous sources. The canister will be positioned away from wind shields such as trees or bushes and at least 15 feet away from any buildings. Collection of the ambient air sample will follow the same methodology as described for indoor air samples.

Sub-Slab Port Installation

In accordance with USEPA guidance, a permanent sub-slab vapor port will be installed in the concrete floor near the center of the structure for collecting sub-slab vapor samples. The ports will be installed after the collection of the paired indoor air sample. The sub-slab vapor ports will be designed to lie flush on the upper surface of the concrete floor and to "float" in the slab to enable collection of vapors from sub-slab material in direct contact with the slab or from a pocket of air directly beneath the slab created by sub-slab material subsidence. Stainless steel Vapor Pins™ will be utilized. The Vapor Pins™ will be preassembled for each installation prior to drilling through the floor to minimize exposure time of the sub-slab soils to an open hole.

To install a sub-slab vapor port, a rotary hammer drill will be used to drill a 1.125 inch outer diameter hole approximately 2-inches into the floor. The inside of the 1.125 inch diameter hole will be cleaned with a damp towel and then a 0.625 inch outer diameter hole will be drilled through the remainder of the concrete. Once through the concrete, the drill will be allowed to penetrate an additional 2-3 inches into the sub-slab material. The outer diameter hole will be cleaned once more with a damp towel. The Vapor Pins™ will be pressed into the concrete slab and sealed with the supplied non-volatile organic compound silicone sleeve. After the sub-slab vapor port is set, a small aliquot of air will be purged into a Tedlar® bag so to not introduce potential vapors to the building interior. A protective cap will be placed the end of the Vapor Pin™, and finished with a stainless steel thread-on flush mount cover. Once the sub-slab vapor port is installed it will be allowed to set for a minimum of 24-hours prior to sampling.

Sub-Slab Port Sampling

The sub-slab vapor samples will be collected using 1-liter polished stainless steel SUMMA® canisters that are cleaned and certified by the laboratory with a calibrated flow controller. The flow controller will be calibrated for a sampling duration of 10 minutes (≈ 80 ml/min). The sub-slab samples will be collected by assembling a short (≈ 16 inches) length of 0.25 inch diameter nylon tubing fitted with stainless steel Swagelok® tube connectors at each end that connect directly to the sub-slab vapor port and the sampling canister. A stainless steel gas-tight valve will be installed near

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the canister end of the sample tubing. The sample assembly will be connected to the sub-slab vapor port and approximately three volumes of dead air will be purged from the sample assembly at a rate of approximately 100 ml/min prior to sampling using a 60-ml syringe into a Tedlar® bag so to not introduce potential vapors to the building interior. The sampling canister will then be connected, opened and then the valve on the sample assembly will be opened. A final canister vacuum on the flow controller between 2 and 5 inches of mercury will signify that sample collection is complete. At the completion of sampling, the canister will be closed first and then the sample assembly to the sub-slab vapor port valve. The canisters will be disconnected from the port and the flow controller removed. The canisters will be gauged with an independent gauge and the final vacuum recorded. The canister will then be closed and sealed with a brass Swagelok® cap.

Meteorological data (temperature, precipitation, humidity, barometric pressure, and wind speed/direction) will be collected before and during sampling activities.

Residential VI Seasonal Sampling

In accordance with USEPA guidance, multiple VI sampling events are required to demonstrate that the VI pathway is not complete. Thus, a second seasonal sampling event is recommended in the opposite season as the initial sampling event. The seasonal sampling event will follow the procedures detailed above for soil gas, sub-slab, indoor air, and ambient air sampling.

Laboratory Analysis

Air samples will be analyzed for the following VOCs:

- 1,1-dichloroethene (1,1-DCE),
- 1,2-dichloroethane (1,2-DCA),
- cis-1,2-dichloroethene (cis-1,2-DCE),
- trans-1,2-dichloroethene (trans-1,2-DCE),
- tetrachloroethene (PCE),
- 1,1,2-trichloroethane (1,1,2-TCA),
- trichloroethene (TCE),
- vinyl chloride,
- toluene,
- ethylbenzene,
- 1,2,4-trimethylbenzene,
- chloroform, and
- methylene chloride.

Analysis of the air samples will use USEPA Compendium Method TO-15. Sample media will be ordered from Eurofins Air Toxics, Inc. (Eurofins) in Folsom, California, using proper quality assurance/quality control procedures and chain-of-custody protocols. Analysis of air samples will also be conducted Eurofins. Analytical results

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will be reported in concentration units of parts per million by volume (ppmv) and micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). To minimize potential effects on the sample integrity, samples will be shipped within 24-hours following collection and the samples will not be chilled during storage. To improve the confidence in measured concentrations, a duplicate sample will be collected and analyzed for the same parameters as the parent samples. Duplicate samples will be collected by connecting two canisters together so that they have the same intake port. One duplicate sample will be collected per 20 samples.

Leak Testing

In accordance with USEPA guidance, leak testing will be performed on the soil gas and sub-slab vapor ports. Leak testing will be accomplished by enriching the atmosphere in the immediate vicinity of the area where the port intersects the ground with a tracer gas and measure a vapor sample from the port for the presence of high concentrations (>10%) of the tracer gas. A shroud consisting of a one-gallon container equipped with two gas valves will be placed over the sub-slab vapor ports and sealed to the ground with modeling clay. The tubing assembly will be passed through the shroud to the outside through a hole that will then be sealed with modeling clay. A cylinder of laboratory grade compressed helium gas will be connected to one gas valve and helium will be introduced to the shroud at a slow rate in order to not pressurize the shroud. A Dielectric MGD-2002 Helium Detector (or equivalent) will be used to measure the amount of helium in the shroud by inserting the detector probe into the second gas valve in the shroud. Once a minimum of 60% helium is detected in the shroud, the port will then be purged and the purged air will be collected in a Tedlar® bag. The helium detector will then be used to screen the sample aliquot in the Tedlar bag. If less than 10% helium is detected in the Tedlar® bag, a SUMMA® canister will then be attached to the tubing assembly and the sample collected while the helium concentration within the shroud is maintained at a minimum of 60%. At the completion of the sample collection, an aliquot of air will be purged again from the port and screened for helium. If less than 10% helium is detected in the Tedlar® bag, the sample will be submitted to the laboratory for analysis. If greater than 10% helium is detected in the Tedlar® bag, the sample will not be analyzed. The sub-slab vapor port will be removed and reinstalled following the procedures detailed above. The sub-slab vapor port will then be leak tested and re-sampled.

Data Evaluation and Reporting

The data obtained from this VI assessment will be evaluated and compared to the calculated Vapor Intrusion Screening Levels (VISLs). Any additional sampling beyond what is described in this IMWP will be based on the data evaluation. The evaluation will use the multiple lines of evidence (MLE) approach described in the *USEPA OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air* (USEPA, June 2015). Additionally, data will be evaluated against indoor air background concentrations as identified in the *Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences [1990-2005]: A Compilation of Statistics for Assessing Vapor Intrusion* [USEPA 2011]). If the evaluation of the initial and

3 August 2015

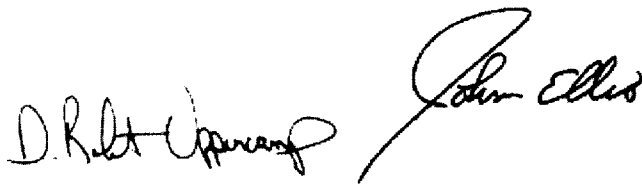
ARCADIS

seasonal sampling events indicate that the VI pathway is incomplete, additional evaluation is not warranted. ARCADIS will prepare a Summary Report of the results from this assessment for Grenada Manufacturing to submit to USEPA.

If you have any questions regarding this IMWP, please do not hesitate to contact us at 225-292-1004.

Sincerely,

ARCADIS, Inc.

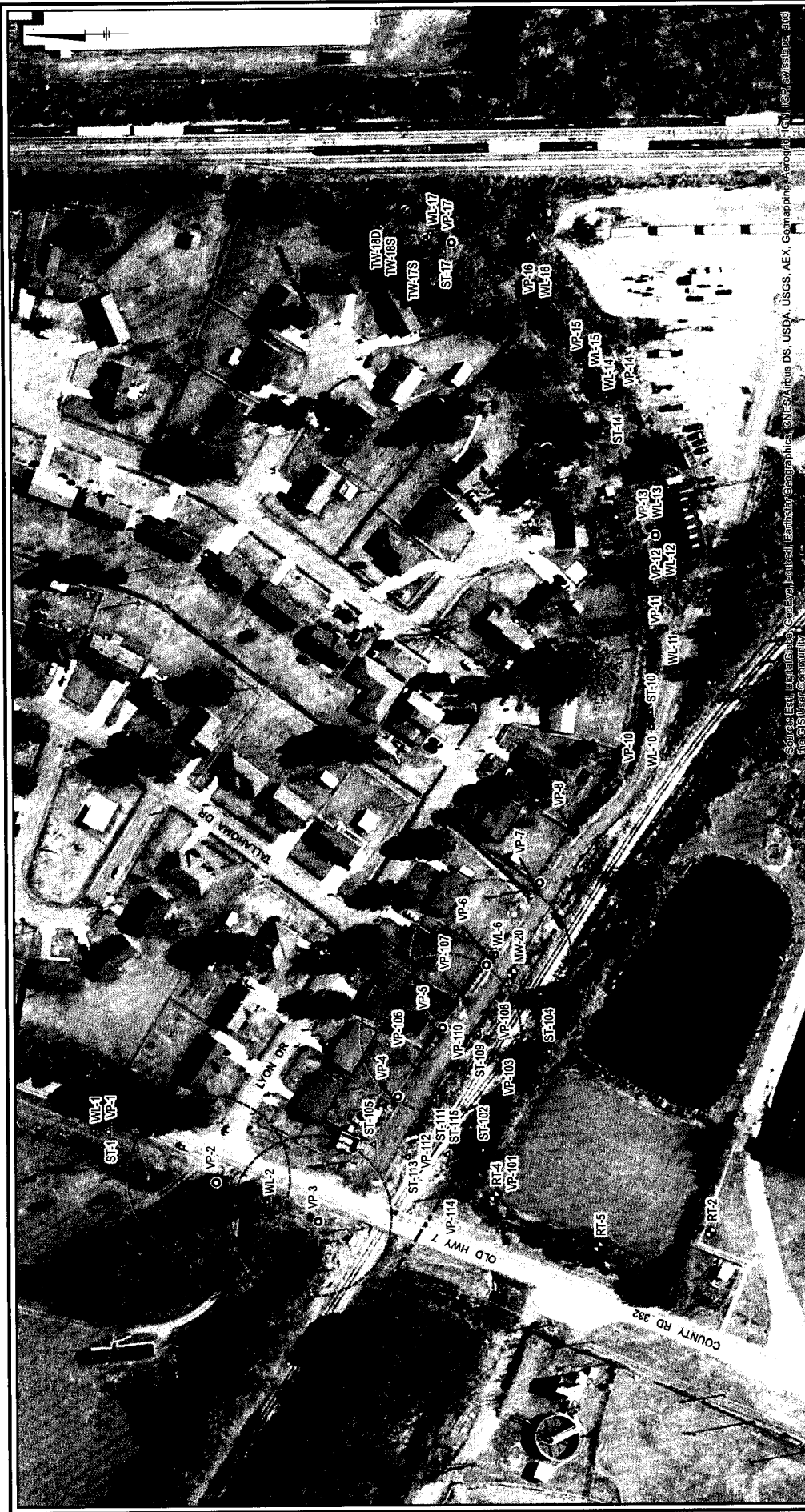
The image shows two handwritten signatures in black ink. The signature on the left is 'D. Robert Uppencamp' and the signature on the right is 'John Ellis'.

D. Robert Uppencamp
Senior Scientist/Risk Assessor

John Ellis
Certified Project Manager

Attachments

Copies:
Steven Sharp – ARCADIS



PROJECT: IN00899 DVD PATH: I:\GIS\PROJECTS\GRENADA\MSR\ICE_MWP SITE MAP.MXD DATE: 8/12/15 8:02:02 PM BY: BAL/TOM

GRENADA MANUFACTURING, LLC
 GRENADA, MISSISSIPPI
 INTERIM MEASURES WORK PLAN

Site Map

ARCADIS | 1

0 120 240
 SCALE IN FEET

FIGURE

Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, August 6, 2015 3:05 PM
To: Norman, Michael
Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Information Redacted pursuant to
5 U.S.C. Section 552 (b)(5), Exemption 5,
Privileged Inter/Intra Agency Document
Specific Privilege: Deliberative Process

From: Norman, Michael
Sent: Thursday, August 06, 2015 3:03 PM
To: Bastek, Brian
Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Michael A. Norman, Chief
RCRA Cleanup and Brownfields Branch
U. S. EPA Region 4
404-562-8792

From: Bastek, Brian
Sent: Tuesday, August 04, 2015 10:37 AM
To: Bentkowski, Ben; Hodoh, Ofia
Cc: Holtzclaw, Brian; Anderson, Meredith; Newman, Keriema; Norman, Michael
Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Ellis, John [<mailto:John.Ellis@arcadis-us.com>]

Sent: Tuesday, August 04, 2015 10:12 AM

To: Bastek, Brian

Subject: RE: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Good Morning Brian,

Attached is a clean copy of the IMWP (less the cover letter).

Please let me know if you need anything else.

Thanks,

John

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

✓ ARCADIS U.S., Inc. | 10352 Plaza Americana | Baton Rouge, LA, 70816

T: 225.292.1004 ; (b)(6) 225.218.9677

Connect with us! www.arcadis-us.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

Professional Registration / PG-TX, # 4082 / PG-LA # 408

ARCADIS, Imagine the result

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]

Sent: Tuesday, August 4, 2015 8:09 AM

To: Ellis, John <John.Ellis@arcadis-us.com>

Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Hi John.

Thanks for getting the work plan into everyone on time. If you don't mind can you please email me a clean copy of the work plan. The one I received (attached) was scanned in and may be missing parts, especially with the figures. Thanks.

Brian Bastek

Environmental Engineer

U.S. EPA, Region 4

RCRA Corrective Action and Permitting Section

Resource Conservation and Restoration Division

61 Forsyth Street, SW

Atlanta, GA 30303

404-562-8511

bastek.brian@epa.gov

From: Don Williams [<mailto:dwilliams@iceindustries.com>]

Sent: Monday, August 03, 2015 5:34 PM

To: Bastek, Brian

Cc: Karp, Jeffrey M.; john.ellis@arcadis-us.com; David W. Nunn; Paul Bishop; Gary Houston

Subject: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

Enclosed please find the Vapor Intrusion workplan requested in your letter of June 30, 2015. A hard copy was sent overnight. Thank you.

Don Williams

Ice Industries Grenada
635 Highway 332
Grenada, MS 38901
Phone 662.226.1161 ext 6113
Fax 662.226.1166

From: gsa [<mailto:administrator@iceindustries.com>]

Sent: Monday, August 03, 2015 3:24 PM

To: Don Williams

Subject: Attached Image

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Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, August 4, 2015 10:37 AM
To: Bentkowski, Ben; Hodoh, Ofia
Cc: Brian Holtzclaw; Anderson, Meredith; Newman, Keriema; Norman, Michael
Subject: FW: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC
Attachments: Grenada VI IMWP 080315 .pdf

Clean copy of the VI work plan.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

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Thanks,
John

John Ellis, P.G. | Principal Scientist / Geologist | john.ellis@arcadis-us.com

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Connect with us! www.arcadis-us.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

Professional Registration / PG-TX, # 4082 / PG-LA # 408

ARCADIS, Imagine the result

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Brian Bastek
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RCRA Corrective Action and Permitting Section
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404-562-8511
bastek.brian@epa.gov

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Sent: Monday, August 03, 2015 5:34 PM

To: Bastek, Brian

Cc: Karp, Jeffrey M.; john.ellis@arcadis-us.com; David W. Nunn; Paul Bishop; Gary Houston

Subject: Grenada VI Investigation- Work Plan Prepared by Arcadis for Grenada Manufacturing, LLC

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Don Williams

Ice Industries Grenada
635 Highway 332
Grenada, MS 38901
Phone 662.226.1161 ext 6113
Fax 662.226.1166

From: gsa [<mailto:administrator@iceindustries.com>]

Sent: Monday, August 03, 2015 3:24 PM

To: Don Williams

Subject: Attached Image

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Pressley, Miriam

From: Anderson, Meredith
Sent: Monday, February 25, 2013 3:00 PM
To: david.oconnor@meritor.com
Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Dave,

I have (finally) had a chance to review the MW-20 Area Investigation Report and Additional Investigation Work Plan and found it to be a good discussion of the work that took place in October and of the actions proposed as a follow-up. I apologize for the delay, as I have had other projects take priority and dominate my time. Below are comments I have pertaining to this report. Once you have had a chance to look these over, let's discuss any questions or clarifications you may have and update me on the current status of this work.

Thanks,
Meredith

General Comments:

- The results of the October investigation are very interesting, and I was pleased to see such a strong correlation between the color tech screening method and the laboratory results. It appears that this was a very beneficial screening tool for this site.
- Are all the primary data gaps (p. 2-5) being filled by the proposed work? In particular, the proposed investigation to address data gaps #1 and #3 (northern plume boundary and the identification of other CVOC sources) should be more clearly specified.
- All soil gas sampling should be conducted consistent with EPA's Vapor Intrusion policy and guidances (see references below). This should be clearly stated in the report and added as references.
- Please add the additional locations discussed below for soil gas sampling, waterloo profiling, and stratigraphic borings.
- Based on the results of the additional investigation, further follow-up actions may be necessary to meet the objectives of this proposal.

Specific Comments:

- p. 1-2: Please add a figure illustrating the conceptual site model in this report and all future reports.
- p. 1-2: Correction - At end of the 1st paragraph, MW-12 should be noted, not MW-13.
- p. 2-5: 1st paragraph - Please expand the discussion of how the identified impacts aren't consistent with the current CSM.
- p. 3-1: 3rd paragraph - The definition of the northern plume boundary should also be mentioned here as a goal of this additional investigation.
- p. 3-1/3-2: Section 3.1 - Please add a soil gas sampling location at the western-most home, at MW-20-W1, and at a location west of Rte 332/north of MW-20-W1 (add to Figure 3-1 also).
- p. 3-2: 1st paragraph - Expand on the discussion of how the additional soil gas invest "will provide a better definition of the likely source" of CVOCs.

p. 3-2: Please ensure that the soil gas port installation and sampling methods (e.g., size of canister; analytical method (TO-15); length of sample time; etc.) are consistent with EPA policy and guidance.

p. 3-2/3-3: Section 3.2 - Please include a discussion of how the proposed groundwater investigation will achieve the data gaps identified on p. 2-5 (gaps #1 and #3); add a location for waterloo profiling and stratigraphy boring at a location west of Rte 332/north of MW-20-W1 (Figures 3-2 and 3-3 also)

Table 2-1: QA the results for MW-20-E2 and MW-20-E3 (toluene/TCE mix-up?); also, toluene results should be noted in this table (and in the text) as well.

App. C: The Key for field boring designations vs. final boring designations refers to "MW-20-E4". Should this be corrected to MW-20-W1? (This table appears twice in App. C-both need to be corrected.)

References:

EPA, 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*. Office of Solid Waste and Emergency Response, FR Ntice November29, 2002.

EPA, 2012. Superfund Vapor Intrusion FAQs. February 2012.

[http://www.epa.gov/superfund/sites/npl/Vapor Intrusion FAQs Feb2012.pdf](http://www.epa.gov/superfund/sites/npl/Vapor%20Intrusion%20FAQs%20Feb2012.pdf)

Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 12, 2013 10:49 AM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Thank you for your response presented below to the EPA comments on the MW-20 Report. I have reviewed the response and the red-lined report and feel that my comments have been adequately addressed. My only observation is that the location of one new soil gas sample (Figure 3-1; sample located south of MW-20-W1) was not located where I had suggested – I was suggesting that it be located on the east side of Hwy 332 to provide information about the gw-to-soil gas pathway near the residence at the edge of the neighborhood. I am fine with the proposed location, however, if you have other technical reasons for this alternate location.

Please contact me if you would like to discuss this further. Also, please inform me of your sampling schedule so that I can schedule EPA oversight. Thank you.

Meredith Anderson
Environmental Engineer
EPA-RCRA/Corrective Action
404-562-8608

From: Jeff DeLaet [<mailto:JDeLaet@tandmassociates.com>]
Sent: Friday, March 08, 2013 3:33 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples
Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

On behalf of Meritor, Inc. (Meritor), please find attached the written response to EPA's comments on the *MW-20 Area Investigation Report and Additional Investigation Work Plan* (T&M Associates, December 2012), which was submitted via email dated February 25, 2013 to Mr. David O'Connor of Meritor. Also attached is a "redline" of the Work Plan to assist you in reviewing where revisions/additions have been made to the Work Plan. Based on EPA's comments.

Upon your review of the attached documents, please advise Dave O'Connor (Meritor) that the Work Plan can be finalized. At such time, I will distribute the necessary hard copies of the final Work Plan to you and those individuals copied on this email.

Have a good weekend, JDD

Jeff DeLaet, PE
Principal Engineer



300 E-Business Way, Suite 200
Cincinnati, Ohio 45241

(513) 247-6120

(Mobile) (b)(6)

www.tandmassociates.com

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Pressley, Miriam

From: Anderson, Meredith
Sent: Friday, March 22, 2013 3:36 PM
To: Chowdhury, Sabina [USA]
Subject: RE: Follow up on voice mail

Thank you for contacting me – I look forward to working with you on this site!
I am available next Tuesday or Wednesday for a phone call to begin discussing aspects of this site. Is there a time on either of those days that works for you? Thanks so much.

Meredith

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

From: Chowdhury, Sabina [USA] [mailto:chowdhury_sabina@bah.com]
Sent: Wednesday, March 20, 2013 1:53 PM
To: Anderson, Meredith
Cc: Belin, John [USA]
Subject: Follow up on voice mail

Hello Meredith

I have left a voice mail at your office introducing myself as BAH hydrologist assigned to provide technical support for the Grenada Manufacturing Facility. Below is my contact information. Please let me know if there is a specific time you would like me to call you.

I am looking forward to working with you on this project.

Thanks, and have a great day!!

Sabina Chowdhury

Sabina Chowdhury, Ph.D., P.E.
Associate
Booz Allen Hamilton
700 N. St. Marys #700
San Antonio TX 78205
ph (210)244-4241
fax (210)244-4206
cell (b)(6)

Pressley, Miriam

From: Anderson, Meredith
Sent: Friday, March 22, 2013 4:01 PM
To: Chowdhury, Sabina [USA]
Subject: RE: [External] RE: Follow up on voice mail

Sounds good. Shall I call you?

From: Chowdhury, Sabina [USA] [mailto:chowdhury_sabina@bah.com]
Sent: Friday, March 22, 2013 3:58 PM
To: Anderson, Meredith
Subject: RE: [External] RE: Follow up on voice mail

Thank you Meredith for emailing! I am open anytime. Will 11 am eastern on Tuesday work?

Sabina Chowdhury

(210)244-4241

cell : (676) 676-6767

From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]
Sent: Friday, March 22, 2013 2:36 PM
To: Chowdhury, Sabina [USA]
Subject: [External] RE: Follow up on voice mail

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Meredith

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

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Thanks, and have a great day!!

Sabina Chowdhury

Sabina Chowdhury, Ph.D., P.E.

Associate

Booz Allen Hamilton

700 N. St. Marys #700

San Antonio TX 78205

ph (210)244-4241

fax (210)244-4206

cell :

(b)(6)

Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 26, 2013 1:52 PM
To: Chowdhury, Sabina [USA]
Subject: FW: MW-20 Work Plan and Addendum (Final)
Attachments: MW-20 Work Plan and Addendum_September 2012.pdf

From: Meredith Anderson [mailto:Anderson.Meredith@epamail.epa.gov]
Sent: Tuesday, March 26, 2013 1:47 PM
To: Anderson, Meredith
Subject: Fw: MW-20 Work Plan and Addendum (Final)

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From: "O'Connor, David A." <David.OConnor@Meritor.com>
To: Meredith Anderson/R4/USEPA/US@EPA
Cc: "James A. Peeples" <JPeebles@tandmassociates.com>
Date: 09/17/2012 04:40 PM
Subject: MW-20 Work Plan and Addendum (Final)

Meredith:

Attached, for your records, is the subject finalized plan for the Grenada site. Thank you for the quick review and approval of the plan following our discussions.

I will provide you a schedule of the proposed work shortly . Please call me with any questions.



David A. O'Connor
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From: Meredith Anderson [<mailto:Anderson.Meredith@epamail.epa.gov>]
Sent: Friday, September 14, 2012 5:03 PM
To: O'Connor, David A.
Cc: James A. Peeples
Subject: EPA Approval - MW-20 Work Plan and Addendum

Thanks, Dave. Everything looks good. This work plan is approved with the changes noted.

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"O'Connor, David A." ---09/14/2012 04:34:32 PM---Meredith:

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To: Meredith Anderson/R4/USEPA/US@EPA
Cc: "James A. Peeples" <JPeebles@tandmassociates.com>
Date: 09/14/2012 04:34 PM
Subject: Grenada - MW-20 Work Plan and Addendum

Meredith:

Attached is the revised Plan with proposed Redline changes per our communications earlier this week. If you formally approve the plan, we will issue a Final Plan and begin the planning process to install the wells.

Contact me with any questions. Have a nice weekend.



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Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 26, 2013 1:18 PM
To: Chowdhury, Sabina [USA]
Subject: Grenada site info

Hi Sabina,

Thank you very much for your time this morning. I appreciate your assistance with this project and look forward to working with you on this puzzling site. I will send the info we discussed shortly (most info will be in forwarded emails). The older documents will need to be scanned/copied first, so may take a bit longer.

Call any time with questions or comments.

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Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 26, 2013 1:52 PM
To: Chowdhury, Sabina [USA]
Subject: FW: MW-20 Work Plan and Addendum (Final)
Attachments: MW-20 Work Plan and Addendum_September 2012.pdf

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Meredith:

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Contact me with any questions. Have a nice weekend.



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MW-20 Area Investigation
Work Plan
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for
Meritor, Inc.
(f.k.a. ArvinMeritor, Inc.)
Troy, Michigan
September 2012

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MW-20 Area Investigation Work Plan
Grenada Manufacturing, LLC
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140539.270



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Section 1

Introduction

Groundwater monitoring has been conducted at the ICE Industries, Inc. (ICE) facility (the “Site”) in Grenada, Mississippi (Figure 1-1) since 1993. Groundwater samples collected from monitoring well MW-20 have historically contained low levels of volatile organic compounds (VOCs). During the most recent groundwater sampling event, conducted in the fall of 2011, the analytical results for the groundwater sample from this well were measured at 86 micrograms per liter ($\mu\text{g/L}$) of trichloroethene (TCE), 88 $\mu\text{g/L}$ of cis-1,2-dichloroethene (cis DCE), and less than 1 $\mu\text{g/L}$ of vinyl chloride. These concentrations are consistent with past sampling events. Figure 1-2, taken from the 2010 Annual Report, shows the estimated extent of TCE in Upper Zone groundwater. Figure 1-3, also from the 2010 Annual Report, is the Upper Zone Potentiometric Surface map. Upper Zone groundwater flow in the MW-20 area is northwestward, toward Riverdale Creek.

In comments regarding the 2009 Annual Monitoring Report, the United States Environmental Protection Agency (USEPA) indicated that work should be conducted to better define the extent of groundwater impact in the vicinity of well MW-20. Meritor will investigate the extent of groundwater impact near this location, and the Work Plan provided in this submittal describes the methods that will be used to complete the investigation. Upon approval of this Work Plan, Meritor will install an additional well or wells to better define the extent of VOC impact in the northern portion of the groundwater plume, particularly in the MW-20 area.

1.1 Facility History

The Grenada manufacturing facility was constructed by Lyon in 1961 and sold to Rockwell International, Inc. (Rockwell) in 1966. The Automotive Division of Rockwell operated a wheel cover manufacturing facility at the Site from 1966 to 1985, when the plant and property were sold to Textron Automotive Company (Textron), formerly Randall Textron. In 1997, Rockwell spun off its Automotive Division into a corporate predecessor to Meritor, Inc. In 1999, Textron sold the operations and property to Collins and Aikman Corporation, which later transferred the operation to Grenada Manufacturing, LLC (Grenada Manufacturing). In 2008, the plant and property were sold (and leased in part) to ICE.

Throughout much of its history, the facility was used to manufacture automobile wheel covers. Following the acquisition of the Site by ICE, the facility was converted to a stamping plant, providing stamp-formed parts for various industries.

1.2 Summary of Site Remedial Actions

Remedial activities at the Site began in 1990 when waste from the former on-site landfill (SWMU 3) was excavated for off-site disposal, and remediation has continued through 2010 with closure of the former Sludge Lagoon (SWMU 4). The remedial measures have either occurred as interim measures or within the framework of the RCRA Facility Investigation and Corrective Measures Study for the Site. Descriptions of the remedial measures performed are presented in the 2010 Annual Report. The 2010 Annual Report identifies additional documents that can be referenced to obtain further information regarding remedial measures that have been completed at the Site.

1.3 Site Conceptual Model

The stratigraphy at the Site is comprised of a surficial unit containing approximately 8 to 15 feet of clayey silt or silty clay overlying approximately 30 to 50 feet of saturated, fine to medium-grained sands that contain varying amounts of silt. Together, these soils are referred to as the "Upper Aquifer". Within the vicinity of the Main Plant, the sand unit is bisected by a discontinuous clay unit at a depth of 20 to 30 feet below ground surface (bgs). This clay unit was not observed in the western portion of the Site or in the vicinity of the Permeable Reactive Barrier near Riverdale Creek. At the base of the Upper Aquifer the sand unit is a thinly-bedded, slightly-sandy, clayey, silt, which is encountered at depths ranging from 47 to 60 feet bgs and serves as an intermediate confining unit, acting as an aquitard to separate the upper and lower aquifers. This layer is approximately 16 feet thick and has been identified as marl exhibiting much higher blow counts than the overlying soils. Below this unit is another sand layer that comprises the "Lower Aquifer", which is not impacted by VOCs present in the upper aquifer.

The Upper Aquifer is the primary horizontal transport pathway for the Site. Groundwater in this aquifer is generally under semi-confined conditions, flows to the northwest, and discharges into Riverdale Creek. It is believed that Riverdale Creek is in direct communication with the Upper Aquifer, and is a gaining stream in this area.

1.4 Work Plan Organization

The remainder of this Work Plan describes the methods to be used to seek to delineate the northern extent of VOC impact in groundwater. All work will be conducted in accordance with the Site-specific Health and Safety Plan and the approved Quality Assurance Project Plan (QAPP) for this Site.

Section 2

MW-20 Area Investigation

2.1 New Well Locations

MW-20 is located near the south edge of a gravel road that runs parallel to railroad tracks and the northern boundary of the Site. This road is used by trucks hauling material to and from the Dunham, Inc. yard located northeast of the Site. Dunham has an easement with the Grenada Railway to use the haul road. North of the haul road are residential properties with back yards that are close to the haul road (Figure 2-1). The residential property lines are adjacent to the north side of the haul road, although the exact property boundaries are not known. The distance from MW-20 to the nearest house is approximately 80 feet.

MW-20 is located 38 feet south of the nearest resident's fence. The distance between the road and the residential fence north of MW-20 is approximately 10 feet. Overhead electric lines running parallel to the north side of the haul road are approximately 12 feet from the road. Therefore, there is very limited access to a suitable drilling location north of MW-20. A boring will be installed north of MW-20 as close to the overhead power lines as can be accomplished safely.

If the groundwater sample collected north of MW-20 is found to contain VOCs at or above MCLs, the boring will be abandoned, and the northern extent of impact in the vicinity of MW-20 will be evaluated using wells installed east and west of the MW-20 location (Figure 2-1). The eastern location is on the north side of the haul road, south of the residential area. The western location is on the west side of Route 332, north of the railroad crossing. Taken together with the potentiometric surface, the groundwater concentrations of VOCs at the locations described above should enable delineation of VOC impact in the northern part of the plume near MW-20.

Utilities will be marked in areas where borings will be installed. BC will contact the State of Mississippi to coordinate work in the Route 332 right-of-way, and is currently in contact with Grenada Railway regarding access to the east location and the location north of well MW-20.

2.2 Groundwater Investigation

The groundwater investigation will proceed in the following manner:

1. The boring location north of MW-20 (Figure 2-1) will be installed and a depth series of groundwater samples will be collected through the Geoprobe® tooling and field screened using the Color-Tec® field screening methodology. A groundwater sample from the vertical zone with the highest field screening value will be sent to a laboratory for VOC analysis. The sample will be analyzed with a 24-hour turn-around time for analysis. If the analysis of the sample and/or the field screening indicates exceedances of one or more MCLs, the boring will be abandoned and the investigation will proceed in the areas east and west of MW-20 as described in step number 2, below. If the analytical results indicate no exceedances of MCLs, a replacement well for MW-20 will be installed, developed and sampled at this boring location; and steps 2 through 4, below, will not apply. Well MW-20 will be maintained and the new well will replace MW-20 in the sampling program and act as the new northern sentinel well for the groundwater monitoring program. The well will be labeled MW-20R, and will be sampled at the frequency indicated for MW-20 in the sampling plan (following the initial sample obtained for this investigation). The existing

well MW-20 will be added to the group of wells that are sampled quadrennially until it can be demonstrated that it is no longer needed in the sampling program.

2. If the analytical results for the groundwater sample obtained from the boring north of MW-20 indicate an exceedance of MCLs for one or more VOCs, the groundwater investigation will proceed by evaluating groundwater at locations upgradient (east) and downgradient (west) of MW-20.
3. A series of three direct-push soil borings will be advanced at the east and west locations shown on Figure 2-1. The borings will be used to better define the nature and extent of VOC impact at these two locations and to select appropriate locations to install sentinel wells.
4. The sampling frequency for wells installed east and west of MW-20 will follow the timing that well MW-20 is sampled (based on the groundwater monitoring program). Well MW-20 will remain in the sampling program (unless the location to the north of MW-20 is found to be unaffected by VOCs above MCLs, as discussed in step 1, above).

2.3 Installation and Sampling Methods

Prior to completion of any borings, utilities in the affected areas will be marked. BC will contact the state of Mississippi to coordinate work in the Route 332 right-of-way, and is currently in contact with Grenada Railway regarding access to the east location and the location north of MW-20.

For all boring locations, a Waterloo Sampler® will be advanced using a Geoprobe® until the screened portion of the sampler enters the water table. The first groundwater sample will be obtained from the Waterloo Sampler® (at the water table) and the sample will be field-screened using Color-Tec® methods to detect the presence of VOCs. A groundwater sample will also be collected from the interval for potential laboratory analysis. The Waterloo Sampler® will then be advanced two feet further into the aquifer and this procedure will be repeated. Sampling will continue as described above until reaching a depth of 25 feet, or 15 feet into the zone of saturation to a depth similar to the depth of MW-20. If the field screening indicates that no impacted groundwater is present at a given boring location, a monitoring well will be installed near this location and sampled to confirm the absence of VOCs (well installation methods are described below). Alternatively, if the field screening indicates the presence of VOC-impacted groundwater, the reserved groundwater sample from the vertical interval with the highest field screening value will be sent to the laboratory for VOC analysis and a monitoring well will not be installed at this location.

Where monitoring wells are to be installed, they will be constructed of 1.5-inch diameter polyvinyl chloride (PVC), with 15-foot pre-pack well screens. The wells will be installed through direct-push tooling near the location of the soil boring. A foam bridge will be placed above each well screen to keep sealing materials out of the screened interval. The interval above each well screen will be filled with bentonite grout emplaced through tremie pipe, and a steel flush-mount well protector will be set in a concrete pad. The wells will be developed no sooner than 24 hours after completion. Following development, each well will be purged and sampled for VOCs according to Site groundwater monitoring procedures and following the protocols outlined in the QAPP.

Borings that are not used for well installation will be abandoned using bentonite grout emplaced through a tremie pipe. The grout will extend to within one-foot of the ground surface, and the upper foot at the ground surface will be backfilled with soil and compacted.

Field equipment, such as non-dedicated sampling or down-hole equipment will be decontaminated between use at each sampling location following the procedures outlined in the QAPP. Purge water and soils generated during the sampling event and well installation will be placed into Department of Transportation approved 55-gallon steel drums and transported to the on-site staging area for investigation

derived waste (IDW). Groundwater analytical results will be evaluated to characterize the purge water and soils for transportation and disposal by a licensed waste hauler retained by Meritor.

The new well(s), the soil boring location(s), and the utility markings will be surveyed by a licensed professional surveyor. Water levels measured in the wells will be incorporated into future Site Upper Zone potentiometric surface maps.



Section 3

Schedule and Reporting

Within 60 days of receipt of the sample results from the new wells, Meritor will submit a letter report detailing the findings. Soil boring logs and well construction diagrams will be included, along with well development and sampling forms and the analytical results. A potentiometric map of the Upper Zone will be generated using groundwater elevations from existing wells and the new wells. This map will be used to define the extent of VOC impact in groundwater north of the Site using the location(s) of the new well(s) to effectively bracket the MW-20 location, and thus provide better definition of VOC impact in the northern portion of the plume.

Meritor plans to install the new well(s) within 30 days following approval of this Work Plan, assuming that the needed access agreements are in place with the railroad, and will notify USEPA of the date that the work will begin.



References

Brown and Caldwell. 2006. Quality Assurance Project Plan.

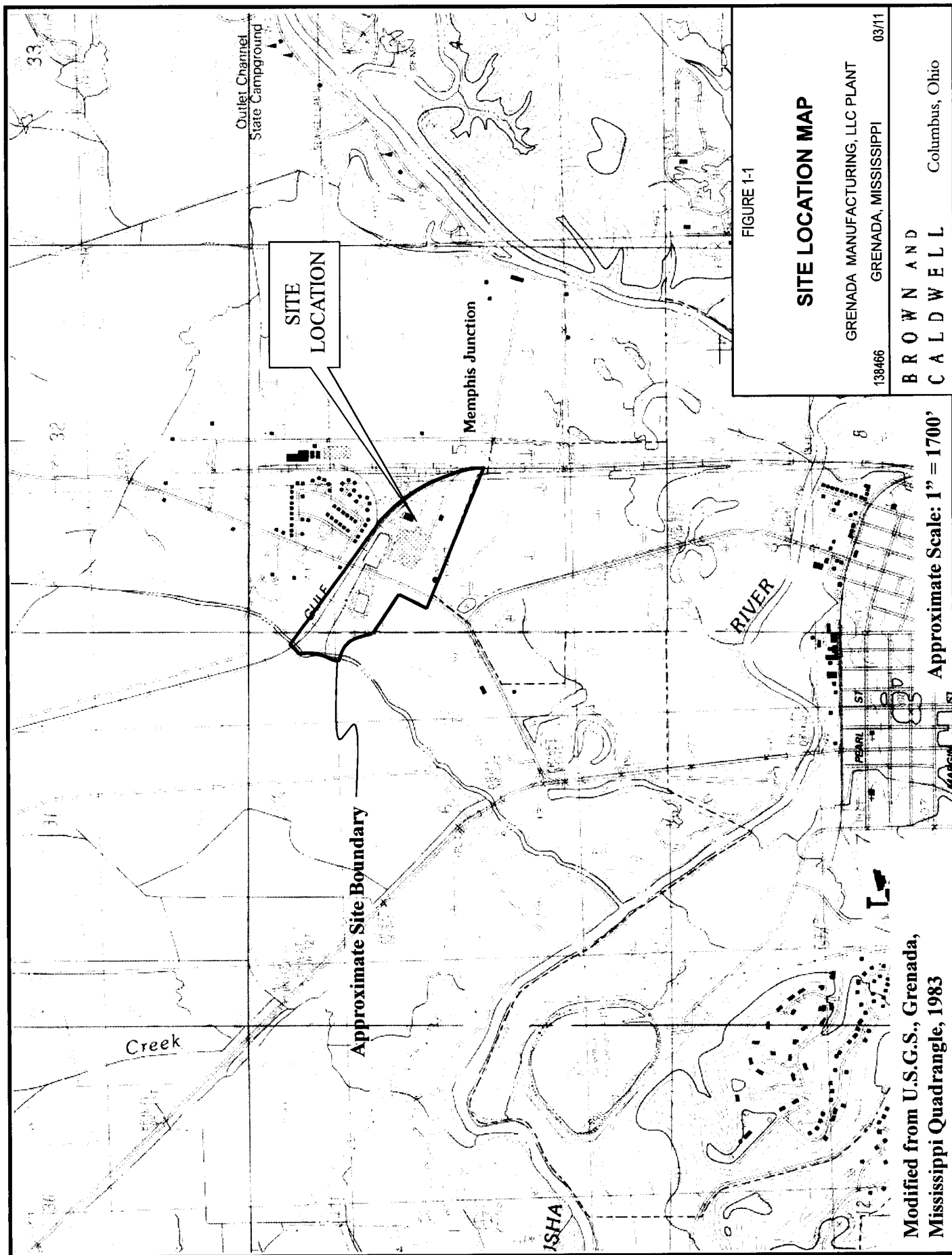
Brown and Caldwell. 2008. Groundwater Monitoring Program Optimization at the Grenada Manufacturing Facility Site, Grenada, Mississippi.

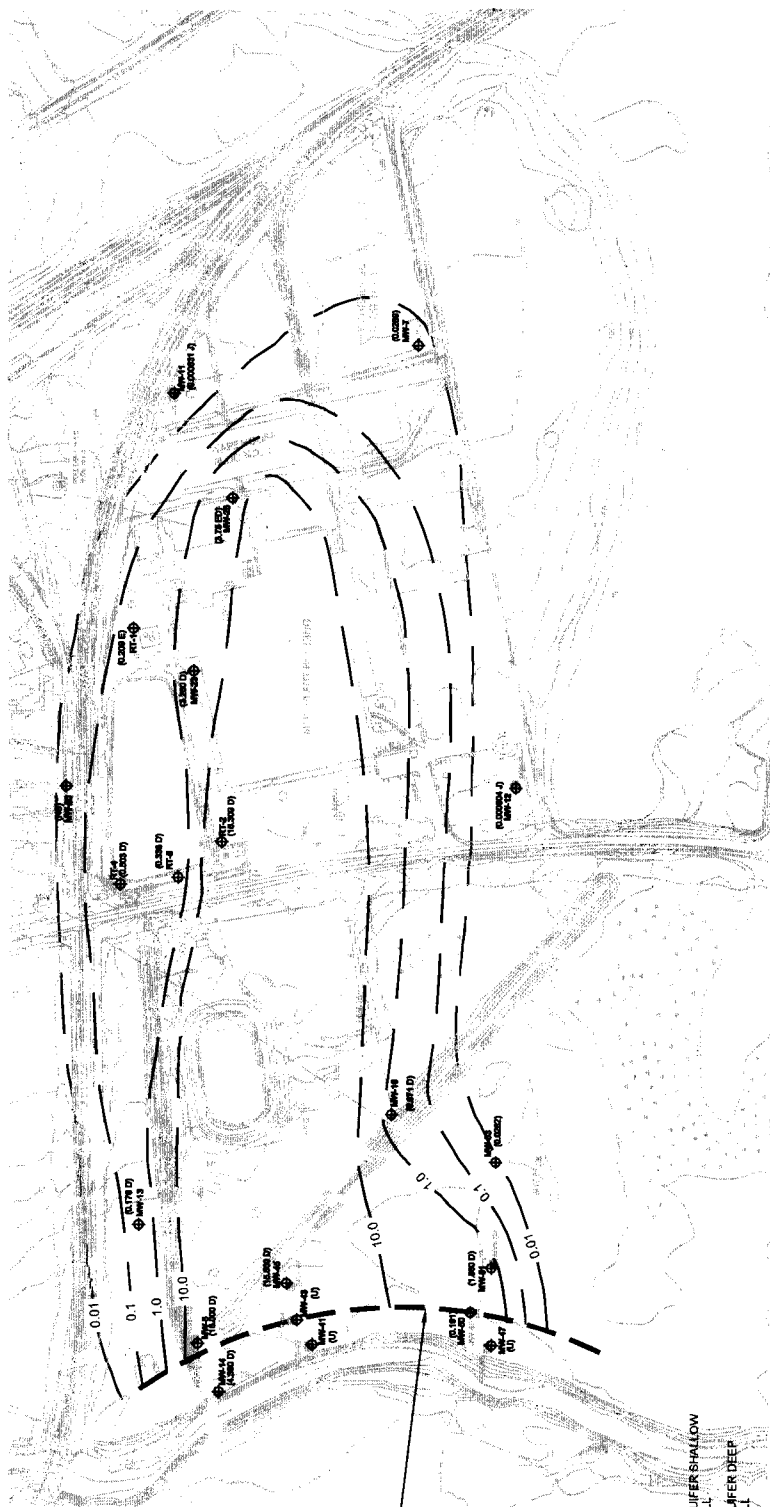
Brown and Caldwell. 2010. 2009 Indoor-Air Monitoring Report, ICE Industries.

Brown and Caldwell. 2011. Annual Monitoring Report, Calendar Year 2010. Grenada Manufacturing, LLC.

USEPA. Letter to ArvinMeritor, Inc. July 12, 2011. "2009 Annual Monitoring Report, September 2010, Grenada Manufacturing, LLC, Grenada, MS, MSD 007 037 278."

Figures





PERMEABLE REACTIVE
BARRIER

LEGEND

- ◆ UPPER MOST AQUIFER SHALLOW MONITORING WELL
- UPPER MOST AQUIFER DEEP MONITORING WELL
- TCE TRICHLOROETHENE
- NS NOT SAMPLED
- NA NOT AVAILABLE OR NOT ANALYZED
- U BELOW LAB DETECTION LIMIT
- J RESULTS WERE ESTIMATED
- D RESULTS FROM DILUTED SAMPLE RUN
- E EXCEEDS CONC. LEVEL FOR THE STANDARD CURVE

REPORTED CONCENTRATION (mg/L)
(0.12) 1.0
CONCENTRATION CONTOUR (mg/L)
CONTOUR INTERVAL = LOGARITHMIC
DASHED WHERE INFERRED

ALL RESULTS REPORTED AS MILLIGRAMS PER LITER (mg/L).

SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993 (UPDATED 2005). WELL LOCATIONS SHOWN ARE APPROXIMATE.

FIGURE 1-2
SPRING 2010
TCE CONCENTRATIONS
UPPER MOST AQUIFER
(SHALLOW WELLS)

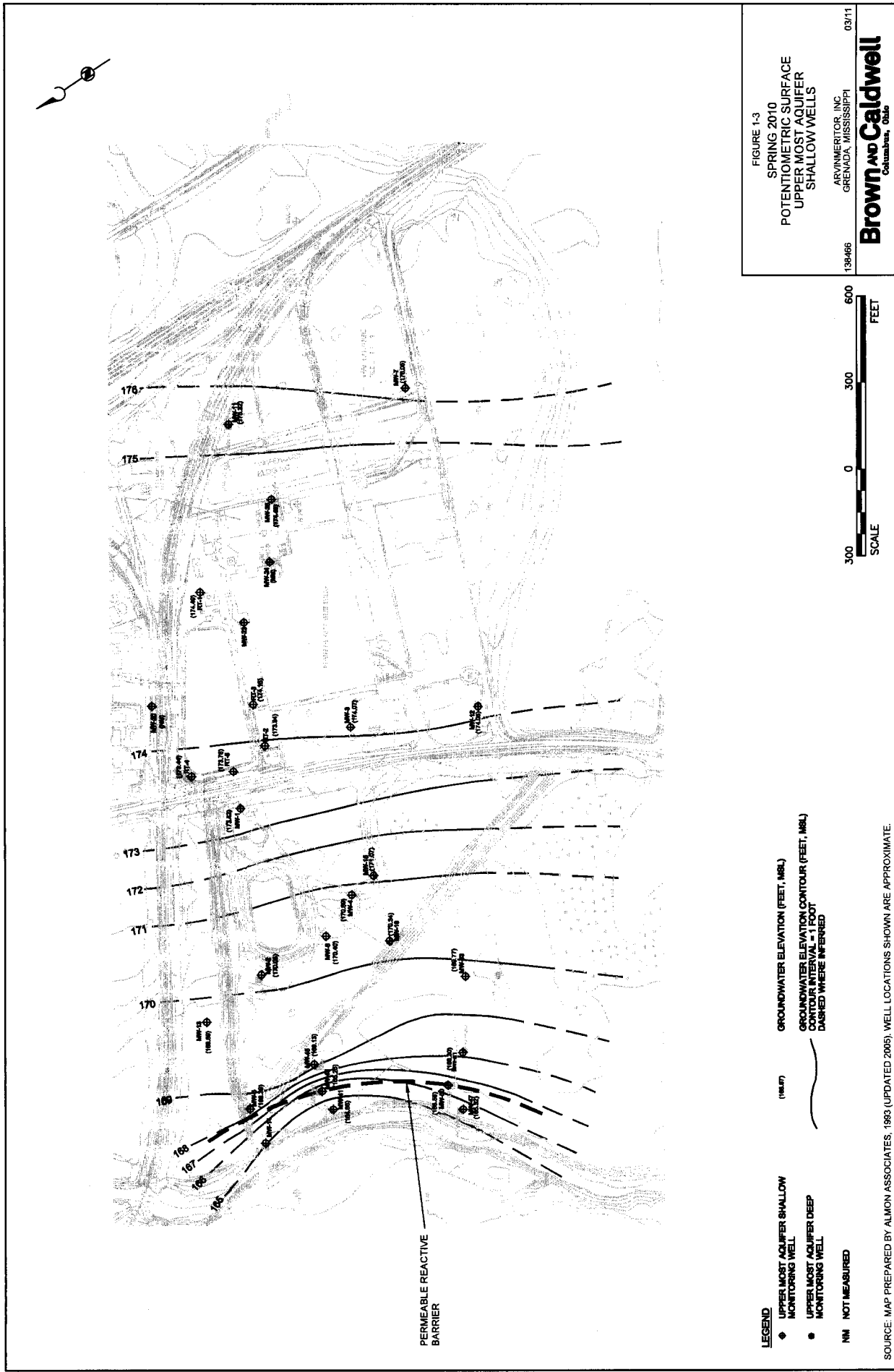
138466.007 ARVINNENTOR, INC.
GRENADA, MISSISSIPPI

08/11

**BROWN AND
CALDWELL**

Columbus, Ohio







Addendum 1

MW-20 Area Investigation
Work Plan Addendum 1
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

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Figure 2-1 Proposed Well Locations



Section 1

Introduction

In a letter dated March 16, 2012 from the United States Environmental Protection Agency (EPA) to Meritor, Inc. (Meritor), EPA requested the installation of monitoring wells in addition to the wells indicated in the Work Plan for the MW-20 Area Investigation. In subsequent discussions with EPA, the scope of this additional work was further clarified. The purpose of this addendum to the MW-20 Area Investigation Work Plan is to define the locations of the proposed new wells and the methods that will be used to install, develop and sample the new wells.

Section 2

PRB Area Investigation

2.1 New Well Locations

Two wells will be installed at both the northern and southern ends of the PRB at locations A and C shown on Figure 2-1. The two locations (A and C) are approximately 10 feet back from each end of the wall and 10 feet upgradient of the wall. In addition, a deep well will be installed near the location of MW-14 and is designated as Well B on Figure 2-1. Minor field adjustment of these locations may be required based on the conditions encountered in the field. The letters indicated on Figure 2-1 are included as place holders for the permanent well names, which will be designated at the time of well installation based on the existing sequence of well numbers at the Site and the order in which the wells are installed.

2.2 Installation and Sampling Methods

Soils will be logged continuously to total depth (the encounter of the clay Marl) for each boring location (A, B and C). Representative portions of each 4-foot soil interval will be field screened for the presence of VOCs using the Color-Tec method for screening soils. If the field screening indicates the presence of VOCs, the depth interval will be noted. After the boring has been completed to total depth (the clay Marl) groundwater monitoring wells will be installed in zones with the highest field screening results for VOCs using the methods described below. At locations A and C, two wells will be installed in zones where VOC impact is identified. At location B a single well will be installed at the interval with the highest field screening results.

If no zones of VOC impact are identified with the field screening, two wells will be placed at each end of the PRB (locations A and C). In this case, the wells would be constructed with 20-foot screens centered on the upper and lower PRB panels in these locations. At location B, if the field screening does not indicate a zone of VOC impact, a well will be installed with a 20-foot screen centered on the lower zone.

All monitoring wells will be constructed of 1.5-inch diameter polyvinyl chloride (PVC), with 15-foot pre-pack well screens, installed through direct-push tooling at the location of the soil boring. The screen intervals for the wells installed at the ends of the PRB will approximate the center of the lower panel for the deep wells and the center of the shallow PRB panel for the shallow well. The base of the deep well in the location of MW-14 will be placed just above the lower confining clay layer at this location.

A foam bridge will be placed above each well screen to keep sealing materials out of the screened interval. The interval above each well screen will be filled with bentonite grout emplaced through tremie pipe, and a steel flush-mount well protector will be set in a concrete pad. The wells will be developed no sooner than 24 hours after completion. Following development, each well will be purged and sampled for VOCs according to Site groundwater monitoring procedures and following the protocols outlined in the Quality Assurance Project Plan (QAPP).

Field equipment, such as non-dedicated sampling or down-hole equipment will be decontaminated between use at each sampling location following the procedures outlined in the QAPP. Purge water and soils generated during the sampling event and well installation will be placed into Department of Transportation approved 55-gallon steel drums and transported to the on-site staging area for investigation derived waste (IDW). Groundwater analytical results will be evaluated to characterize the purge water and soils for transportation and disposal by a licensed waste hauler retained by Meritor.

derived waste (IDW). Groundwater analytical results will be evaluated to characterize the purge water and soils for transportation and disposal by a licensed waste hauler retained by Meritor.

The new wells, the soil boring locations, and the utility markings will be surveyed by a licensed professional surveyor. The new wells will be sampled semiannually as a part of the ongoing monitoring program for the site, until it is determined that a longer duration between sampling events is appropriate for one or more of the wells. At that time, a new sampling frequency will be proposed and submitted to EPA for review and approval. Water levels measured in the wells will be incorporated into future potentiometric surface maps.



Section 3

Schedule and Reporting

Within 60 days of receipt of the sample results from the new wells, Meritor will submit a letter report detailing the findings. Soil boring logs and well construction diagrams will be included, along with well development and sampling forms and the analytical results. Potentiometric maps of the Upper and Lower Zones will be generated using the groundwater elevations from existing wells and the new wells.

Meritor plans to install the new wells in within 30 days following approval of this Work Plan Addendum, and will notify USEPA of the date that the work will begin.



References

Brown and Caldwell. 2006. Quality Assurance Project Plan.

Brown and Caldwell. 2008. Groundwater Monitoring Program Optimization at the Grenada Manufacturing Facility Site, Grenada, Mississippi.

Brown and Caldwell. 2011. Annual Monitoring Report, Calendar Year 2010. Grenada Manufacturing, LLC.

Figures

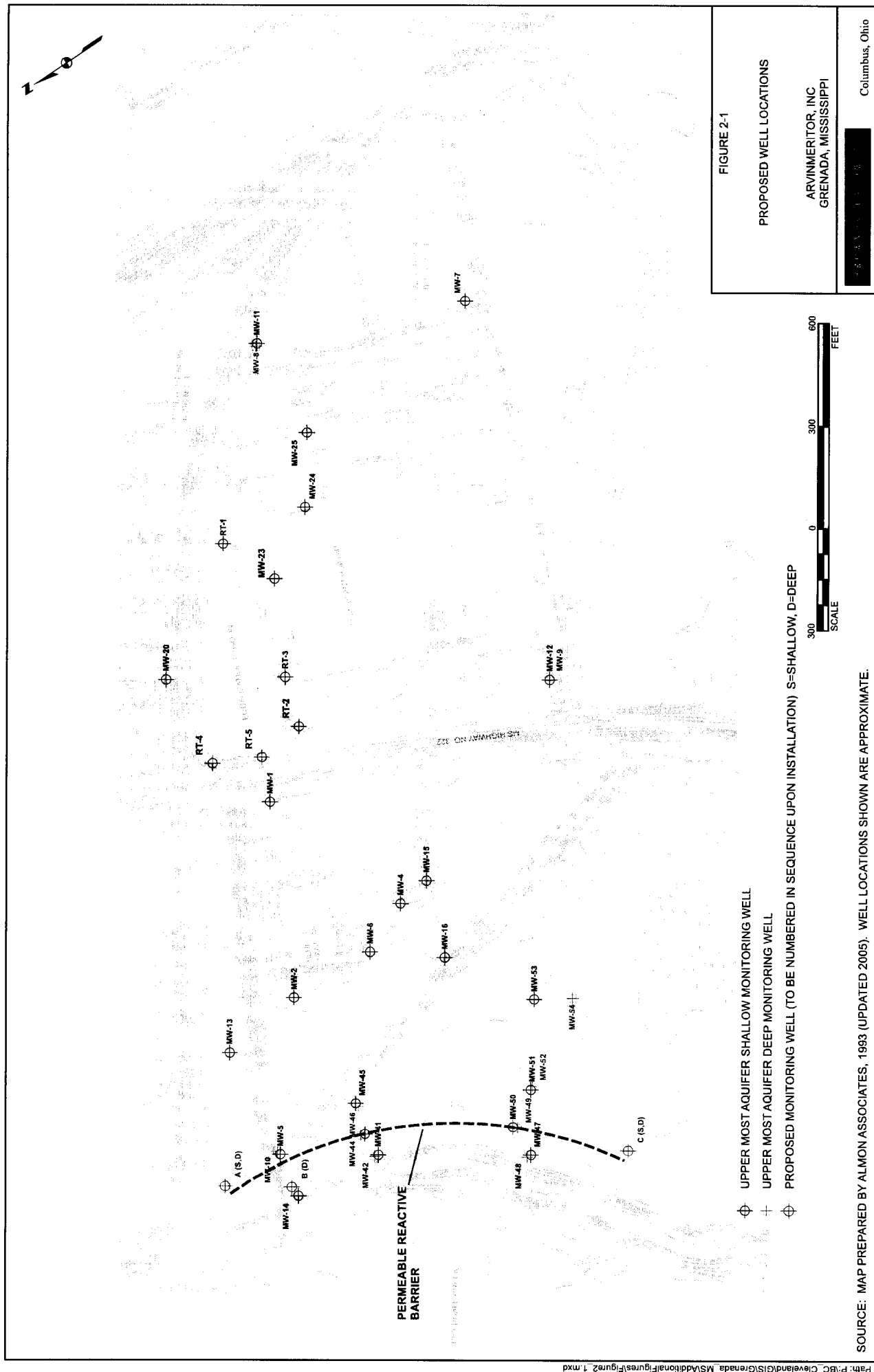


FIGURE 2-1

PROPOSED WELL LOCATIONS

ARVINMERITOR, INC
GRENADA, MISSISSIPPI

Columbus, Ohio

UPPER MOST AQUIFER SHALLOW MONITORING WELL
UPPER MOST AQUIFER DEEP MONITORING WELL
PROPOSED MONITORING WELL (TO BE NUMBERED IN SEQUENCE UPON INSTALLATION) S=SHALLOW, D=DEEP



SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993 (UPDATED 2005). WELL LOCATIONS SHOWN ARE APPROXIMATE.

Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 26, 2013 1:53 PM
To: Chowdhury, Sabina [USA]
Subject: FW: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

From: Jeff DeLaet [mailto:JDelaet@tandmassociates.com]
Sent: Tuesday, March 12, 2013 10:56 AM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

Thank you for the e-mail, and greatly appreciate your very timely response. When we lock in the date(s) of the field sampling, I will be sure to give you advanced notice so you can make the appropriate arrangements for EPA oversight.

Regards, JDD

Jeff DeLaet, PE
Principal Engineer



300 E-Business Way, Suite 200
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(513) 247-6120

) (Mobile) (b)(6)

www.tandmassociates.com

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From: Anderson, Meredith [mailto:Anderson.Meredith@epa.gov]
Sent: Tuesday, March 12, 2013 10:49 AM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Thank you for your response presented below to the EPA comments on the MW-20 Report. I have reviewed the response and the red-lined report and feel that my comments have been adequately addressed. My only observation is

that the location of one new soil gas sample (Figure 3-1; sample located south of MW-20-W1) was not located where I had suggested – I was suggesting that it be located on the east side of Hwy 332 to provide information about the gw-to-soil gas pathway near the residence at the edge of the neighborhood . I am fine with the proposed location, however, if you have other technical reasons for this alternate location.

Please contact me if you would like to discuss this further. Also, please inform me of your sampling schedule so that I can schedule EPA oversight. Thank you.

Meredith Anderson
Environmental Engineer
EPA-RCRA/Corrective Action
404-562-8608

From: Jeff DeLaet [<mailto:JDeLaet@tandmassociates.com>]
Sent: Friday, March 08, 2013 3:33 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples
Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

On behalf of Meritor, Inc. (Meritor), please find attached the written response to EPA's comments on the *MW-20 Area Investigation Report and Additional Investigation Work Plan* (T&M Associates, December 2012), which was submitted via email dated February 25, 2013 to Mr. David O'Connor of Meritor. Also attached is a "redline" of the Work Plan to assist you in reviewing where revisions/additions have been made to the Work Plan. Based on EPA's comments.

Upon your review of the attached documents, please advise Dave O'Connor (Meritor) that the Work Plan can be finalized. At such time, I will distribute the necessary hard copies of the final Work Plan to you and those individuals copied on this email.

Have a good weekend, JDD

Jeff DeLaet, PE
Principal Engineer



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Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 26, 2013 1:52 PM
To: Chowdhury, Sabina [USA]
Subject: FW: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments
Attachments: 3.8.13MAnderson.pdf; Grenada MW-20_Area _Additional_Investigation_rev030813.pdf

From: Jeff DeLaet [mailto:JDelaet@tandmassociates.com]
Sent: Friday, March 08, 2013 3:33 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

On behalf of Meritor, Inc. (Meritor), please find attached the written response to EPA's comments on the *MW-20 Area Investigation Report and Additional Investigation Work Plan* (T&M Associates, December 2012), which was submitted via email dated February 25, 2013 to Mr. David O'Connor of Meritor. Also attached is a "redline" of the Work Plan to assist you in reviewing where revisions/additions have been made to the Work Plan. Based on EPA's comments.

Upon your review of the attached documents, please advise Dave O'Connor (Meritor) that the Work Plan can be finalized. At such time, I will distribute the necessary hard copies of the final Work Plan to you and those individuals copied on this email.

Have a good weekend, JDD

Jeff DeLaet, PE
Principal Engineer



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March 8, 2013

Ms. Meredith Clarke Anderson
Environmental Protection Agency
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Re: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan –
EPA Review Comments dated February 25, 2013

Dear Ms. Anderson:

On behalf of Meritor, Inc. (Meritor), T&M Associates has prepared this letter in response to EPA's comments on the *MW-20 Area Investigation Report and Additional Investigation Work Plan* (T&M Associates, December 2012), which was submitted via email dated February 25, 2013 to Mr. David O'Connor of Meritor. EPA's original comments are included in *italics* and responses have been incorporated in **bold** below each comment.

General Comments:

1. *The results of the October investigation are very interesting, and I was pleased to see such a strong correlation between the color tech screening method and the laboratory results. It appears that this was a very beneficial screening tool for this site.*

The Color Tech screening method correlated reasonably well with the laboratory results and appeared to be a reliable screening tool at this site.

2. *Are all the primary data gaps (p. 2-5) being filled by the proposed work? In particular, the proposed investigation to address data gaps #1 and #3 (northern plume boundary and the identification of other CVOC sources) should be more clearly specified.*

Meritor's proposed investigation described in Section 3.2 is intended to delineate the northern plume boundary and to determine the source (and/or the originating direction) of the groundwater impact identified in the MW-20 area. If the results of the investigation establish that the groundwater impact observed in this area is not associated with the source area(s) at the Grenada Manufacturing Site, Meritor would not be obligated to find the source of the groundwater plume or the northern plume boundary.

3. *All soil gas sampling should be conducted consistent with EPA's Vapor Intrusion policy and guidances (see references below). This should be clearly stated in the report and added as references.*

EPA's vapor intrusion policy and guidances (listed below) are resource tools for assessing and dealing with vapor intrusion issues. Their content will be considered in screening evaluations regarding whether or not the vapor intrusion exposure pathway is complete and, if so, whether it poses an unacceptable risk to human health. Meritor will be implementing the proposed soil gas investigation outlined in Section 3.1, being mindful that these resource tools are available to help define any impact that could be present as a result of soil gas migration from the direction of the Grenada Manufacturing plant or anything to the south and east of the residential neighborhood. These references have been added to the "References" section of the Work Plan.

Reference #1: EPA, 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils* (Subsurface Vapor Intrusion Guidance), U.S. EPA, EPA530-F-02-052, November 2002.

**Reference #2: EPA, 2012. Superfund Vapor Intrusion FAQs. February 2012.
http://www.epa.gov/superfund/sites/npl/Vapor_Intrusion_FAQs_Feb2012.pdf**

4. *Please add the additional locations discussed below for soil gas sampling, waterloo profiling, and stratigraphic borings.*

Meritor has revised Section 3.1 and Figures 3-1, 3-2 and 3-3 to include the requested additional locations for soil gas sampling, waterloo profiling and stratigraphic borings. Detailed responses are discussed below in the Specific Comments section.

5. *Based on the results of the additional investigation, further follow-up actions may be necessary to meet the objectives of this proposal.*

Meritor recognizes that follow-up actions may be necessary based on the results of the additional investigation.

Specific Comments:

- 1) *p. 1-2: Please add a figure illustrating the conceptual site model in this report and all future reports.*

Meritor has added the conceptual site model (CSM) as Figure 1-2 of this Work Plan, and will include this figure in appropriate future reports. This CSM model has not

been updated based on the information obtained in the October 2012 investigation. The results of that investigation were not conclusive with respect to the source of the plume, so it is premature to make any changes to the CSM at this time.

- 2) p. 1-2: *Correction - At end of the 1st paragraph, MW-12 should be noted, not MW-13.*

This correction has been made in the text.

- 3) p. 2-5: *1st paragraph - Please expand the discussion of how the identified impacts aren't consistent with the current CSM.*

The discussion on page 2-5 has been expanded to better indicate the inconsistencies of the plume location identified in the MW-20 investigation and the current CSM.

- 4) p. 3-1: *3rd paragraph - The definition of the northern plume boundary should also be mentioned here as a goal of this additional investigation.*

The goal of the soil gas investigation is to determine if there are CVOCs present in soil gas in the vicinity of the residents to the north. If there is little or no evidence of CVOC impact in the soil gas, it will be concluded that the deeper plume identified in the area of the residents is not a concern in terms of indoor air quality for the neighborhood. Moreover, the soil gas investigation is not designed to define the northern extent of the groundwater plume or to determine if there is another source for the groundwater plume. The groundwater investigation described in Section 3.2 will serve that purpose.

- 5) p. 3-1/3-2: *Section 3.1 - Please add a soil gas sampling location at the western-most home, at MW-20-W1, and at a location west of Rte 332/north of MW-20-W1 (add to Figure 3-1 also).*

Meritor has revised Figure 3-1 to include the three (3) requested additional locations for soil gas sampling.

- 6) p. 3-2: *1st paragraph - Expand on the discussion of how the additional soil gas investigation "will provide a better definition of the likely source" of CVOCs.*

The paragraph pertains to the entire investigation, as the investigation will involve multiple Waterloo Profiler sampling locations that will obtain vertical profiles of groundwater CVOC concentration at multiple locations (in addition to soil gas sampling). If the Profiler locations indicate an increase in CVOC concentration as the borings extend further from the Grenada Manufacturing plant, it is likely that another source is responsible for the impact identified in the MW-20 Area. Additional borings

may be completed at that time, based on the findings, to better distinguish the plumes. It is not expected that the soil gas investigation will provide information for identifying a separate source.

- 7) *p. 3-2: Please ensure that the soil gas port installation and sampling methods (e.g., size of canister; analytical method (IO-15); length of sample time; etc.) are consistent with EPA policy and guidance.*

Meritor will ensure that the soil gas port installation and sampling methods are consistent with EPA policy and guidance.

- 8) *p. 3-2/3-3: Section 3.2 - Please include a discussion of how the proposed groundwater investigation will achieve the data gaps identified on p. 2-5 (gaps #1 and #3); add a location for Waterloo profiling and stratigraphy boring at a location west of Rte 332/north of MW-20-W1 (Figures 3-2 and 3-3 also).*

Meritor has revised Section 3.2 and Figures 3-2 and 3-3 to show the requested additional locations for Waterloo profiling and the stratigraphic boring. Additional discussion has been added to this section to indicate how the data gaps will be addressed by this investigation.

- 9) *Table 2-1: QA the results for MW-20-E2 and MW-20-E3 (toluene/TCE mix-up?); also, toluene results should be noted in this table (and in the text) as well.*

Table 2-1 has been revised to correct for data transposition (from laboratory report to Table 2-1) errors associated with TCE concentrations detected at MW-20-E2 and MW-20-E3. Also, Table 2-1 has been revised to include the toluene concentrations detected at MW-20-E2 and MW-20-E3.

- 10) *App. C: The Key for field boring designations vs. final boring designations refers to "MW-20-E4". Should this be corrected to MW-20-W1? (This table appears twice in App. C-both need to be corrected.)*

This correction has been made in the text.

545 Metro Place South, Suite 100, Dublin, Ohio 43017
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Should you have any questions regarding these responses or this investigation, please contact Dave O'Connor of Meritor (248-435-2706) or Jim Peeples at (614-766-3668).

Sincerely,
T&M Associates

A handwritten signature in black ink, appearing to read 'Jim Peeples'.

Jim Peeples, PE
Project Manager

A handwritten signature in black ink, appearing to read 'Ihsan Al-Fayyomi'.

Ihsan Al-Fayyomi
Division Manager

e-copy: David O'Connor (Meritor, Inc.)

ENERGY & UTILITIES | ENVIRONMENTAL | PUBLIC WORKS | REAL ESTATE DEVELOPMENT
SOLID WASTE | TRANSPORTATION | WATER & WASTEWATER

Regional Offices in OHIO, NEW JERSEY and PENNSYLVANIA

Pressley, Miriam

From: Anderson, Meredith
Sent: Tuesday, March 26, 2013 2:32 PM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Dave,

Any word on when this work will take place? Also, can you give me an update on when the data from the Oct investigation at the PRB will be available? What is the current status of the evaluation of the PRB? This may be a good time to have a team conference call to check-in on how things are progressing. Let me know when a good time would be, if you think this would be helpful.

Other questions: Has the upload of data to EPA's DART system been successful (I am having issues with this at another site)? Can you provide me with an electronic copy of the 2011 Monitoring Report? Did I tell you that Dave Jenkins retired at the end of Jan?

Thanks for an update.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

From: Jeff DeLaet [<mailto:JDelaet@tandmassociates.com>]
Sent: Tuesday, March 12, 2013 10:56 AM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

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Regards, JDD

Jeff DeLaet, PE
Principal Engineer



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From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]
Sent: Tuesday, March 12, 2013 10:49 AM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

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Please contact me if you would like to discuss this further. Also, please inform me of your sampling schedule so that I can schedule EPA oversight. Thank you.

Meredith Anderson
Environmental Engineer
EPA-RCRA/Corrective Action
404-562-8608

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Sent: Friday, March 08, 2013 3:33 PM
To: Anderson, Meredith
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Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

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Have a good weekend, JDD

Jeff DeLaet, PE
Principal Engineer



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Pressley, Miriam

From: Anderson, Meredith
Sent: Thursday, March 28, 2013 2:41 PM
To: Chowdhury, Sabina [USA]
Subject: More Grenada info - FW: Grenada MFG 2010 Annual Report comments
Attachments: 111122 CY2010 Annual Monitoring Report DJenkins Comments.pdf

Sabina,

This memo is from the EPA hydro that worked with me for some time until his retirement. Providing this to you so that you can see what some of his issues/concerns were. Thanks.

Meredith

From: Meredith Anderson [mailto:Anderson.Meredith@epamail.epa.gov]
Sent: Thursday, March 28, 2013 2:34 PM
To: Anderson, Meredith
Subject: Fw: Grenada MFG 2010 Annual Report comments

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
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anderson.meredith@epa.gov

----- Forwarded by Meredith Anderson/R4/USEPA/US on 03/28/2013 02:33 PM -----

From: Dave Jenkins/R4/USEPA/US
To: Meredith Anderson/R4/USEPA/US@EPA
Cc: jenkins.dave@epa.gov, Glenn Adams/R4/USEPA/US@EPA
Date: 12/15/2011 03:41 PM
Subject: Grenada MFG 2010 Annual Report comments

Hi Meredith,

(See attached file: 111122 CY2010 Annual Monitoring Report DJenkins Comments.pdf)

Call me if you want to talk about these comments. A paper copy is on it's way.

Dave
x28462



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION 4

61 Forsyth Street

Atlanta, Georgia 30303-3104

MEMORANDUM

December 15, 2011

4WD-TSS

SUBJECT: 2010 Annual Monitoring Report for the Grenada Manufacturing Site

FROM: David N. Jenkins, Environmental Scientist
Technical Support Section, Superfund Support Branch

THROUGH: Glenn Adams, Section Chief, Technical Support Section, Superfund Support Branch

TO: Meredith Anderson, RCRA Project Manager

Meredith,

I have reviewed the 2009 monitoring report for the Grenada Manufacturing Site as you requested. Here are my comments. Please call me at 404-562-8462 if you have any questions.

The document reviewed is titled:

Brown and Caldwell, 2011, Annual Monitoring Report Calendar Year 2010, Grenada Manufacturing, LLC, Grenada Mississippi, Brown and Caldwell, 4000 Lakehurst Court, Dublin, OH 43019, November 2011.

I also reviewed my comments dated March 31, 2011 regarding the 2009 Annual Monitoring report, which is the only other report related to this site for which I have written comments. The Brown & Caldwell summary of a meeting with EPA on September 15, 2011 (USEPA Meeting Atlanta 9-15-2011.pptx) which I received on October 28, 2011 also was reviewed.

GENERAL COMMENT:

In the March 31, 2011 memo regarding the 2009 Annual Monitoring report I stated:

"There are no maps or graphs in this report which help you as the EPA Project Manager understand how the site is progressing. The maps which are in this report do not show the extent of contamination. There are no presentations in this report which would help you convince your management or the public that EPA is performing its responsibilities at this site."

The 2010 Annual Monitoring Report contains many more maps and graphs than were in the original 2009 annual report. The 2010 report contains a brief summary of the site history, shows the locations of operable units on a map (Figure 1-4) and shows the distribution of contamination and concentration trends versus time in various ways. A useful conceptual site model is shown in one of the figures (figure 1-6). Overall this is a good presentation of the status of contaminated groundwater at this site.

Key sample analysis results from 2010 are shown on Figure 3-5. This figure clearly shows, among other things, that high VOC concentrations continue to be observed down gradient from the PRB wall, particularly TCE and VC in wells MW14 and MW41. VOC concentrations up gradient from the PRB wall remain high. The sample results from the two sample events performed in 2010 are also shown in the contoured plume maps on Figures 3-7 through 3-14. Note the values on these figures are reported in mg/L. No regulatory levels, such as MCLs, State ARARs or site-specific target cleanup levels are reported on these figures, which would improve the clarity and usefulness of these figures for some readers. If plotted on Figure 3-7 for example, the MCL for TCE (0.005 mg/L) would be outside of the smallest concentration contour on this map. TCE exceeds the MCL in groundwater throughout the plant site up gradient from the PRB well and also at some locations down gradient from the wall. But as they are, the figures provide an excellent demonstration of where groundwater contamination is relative to source areas, groundwater discharge areas and surface water streams, the PRB remedy, etc.

In the March 31, 2011 memo regarding the 2009 Annual Monitoring report I stated the data suggests TCE contamination may migrate laterally around the north and south end of the wall. I also stated that with the data presented there is no way to evaluate whether TCE contamination moves through or vertically under the wall. I continue to believe that contamination may be migrating around the wall, and continue to recommend that additional monitoring wells be installed around the north and south ends of the wall. On the north end of the wall, Figure 3-7 clearly shows that the plume extends beyond the north end of the

wall, and shows the closest monitoring wells MW5 and MW13 are about 175 feet and 400 feet away from the end of the wall. Again, as noted in the previous paragraph, a contour line representing the MCL for TCE (0.005 mg/L) would plot beyond the lowest concentration contour shown on Figure 3-7.

The TCE concentrations in wells down gradient from the PRB wall continue to be a concern. The conceptual site model (Figure 1-6) shows the PRB is believed to be effectively keyed into the underlying clay, which is shown to be an effective barrier to downward contaminant migration. But the TCE concentrations in MW14 down gradient from the PRB have increased since the PRB was installed and remain high (around 200 times greater than the MCL - see Table 3-2 PDF p.73/231). TCE is detected in surface water at nearby location SW12, and is present at high concentrations in up gradient wells MW2, MW17 and MW5. It isn't clear where the TCE in MW14 is coming from, whether there is a pathway through or under the wall near this location, or whether this particular part of the TCE plume was simply always down gradient from the wall even before the wall was installed in March 2005. Groundwater near MW14 is not treated by the PRB or any other active remedial measure. The TCE concentrations are too high and the travel distance to the stream is too short for Monitored Natural Attenuation (MNA) to be an effective remedy, and there is no indication in the sample results that contamination along this pathway will be depleted soon. As stated in the March 31 memo regarding the 2009 Annual Report: *"Natural attenuation is not mentioned as a remedy in this report. This report would not meet EPA requirements if Monitored Natural Attenuation (MNA) was the selected remedy, so there is no remedy in place for contamination which is already past the PRB wall."*

While the maps and figures in the 2010 report are much more comprehensive than in the 2009 Annual report, there still "... are no maps in this report showing the distribution of parameters, such as pH, dissolved oxygen, sulfate, etc., which often control or help explain the mobility of metals in groundwater" (March 31, 2011). The well sampling schedule described elsewhere in this memo includes a major sample event in the Spring of 2012. An event this size has not happened since 2008 and will not happen again until 2016. I recommend that the report for major sampling events at this site be used to thoroughly describe the conditions at the site, describe the conditions which are limiting, enhancing or might be modified to enhance contaminant attenuation. These major sample events are rare enough that the reports should be an evaluation of the effectiveness of the remedy and demonstrations of the progress toward cleanup. From the 2001 EPA Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action (p.1.1): "EPA's groundwater strategy generally is to:

- focus resources at facilities that warrant attention in the near term;
- control short-term threats;
- prioritize actions within facilities to address the greatest risks first; and
- make progress toward the ultimate goal of returning contaminated groundwater to its maximum beneficial use."

The maps and tables in this report demonstrate a focus issues at the facility which warrant attention in the near term (Point 1), actions have been prioritized to address the greatest risk first (Point 3), efforts have been made to control short-term threats (Point 2) though the overall effectiveness of the PRB is has not been demonstrated. But the 2010 Annual Report does not address Point 4 of EPA groundwater strategy in any way.

The Annual Report for the Spring 2012 sampling event should include installation of additional monitoring wells around the ends of the PRB to verify the wall is capturing and treating all of the plume. These wells should be installed prior to the 2012 sampling event. Also, some additional characterization should be performed between the PRB wall and MW14 to determine the source or cause of continued high contaminant concentrations in that area 7 years after the PRB was installed.

The Spring 2012 sample event should add to the information regarding the site which will help the total cleanup time which will be required for the site. With this estimate, the potential number of PRB wall replacements and the associated costs of maintaining the remedy can be estimated. This estimate also provides a better benchmark against which supplemental remediation efforts can be evaluated. Figure 3-7 shows groundwater almost 3,000 feet up gradient from the PRB is contaminated at concentrations at least twice the MCL for TCE. TCE concentrations in some wells are 3,200 times greater than the MCL. The PRB remedy must last long enough for contamination to travel to through the wall. Currently, the life of the PRB probably is somewhere between 6 and 15 years based on conversations from our meeting at

the Brown & Caldwell office in Alpharetta, GA on September 15, 2011 (see Brown & Caldwell summary of USEPA Meeting Atlanta 9-15-2011.pptx Slide 18/20). The wall may require quite a few replacements, but the 2010 report provides no indication of "... progress toward the ultimate goal of returning contaminated groundwater to its maximum beneficial use".

RECOMMENDATIONS:

I am concerned about the performance of the PRB in the area around MW14. Based on the delivery schedule of the 2009 and 2010 Annual Reports to EPA, the data from the Spring 2012 sampling event won't be available until the middle or end of 2013. Wells MW5 and MW10 were scheduled to have been sampled in the 2011 event (Table 1-1 PDF p.55/231). I recommend that EPA ask to see these data from the 2011 sample event as soon as possible.

I recommend that deep zone monitoring be installed near MW14 as soon as possible. All other monitoring locations along the PRB wall include shallow and deeper monitoring wells.

I recommend that at least one pair of monitoring wells (shallow and deeper) be installed near the north and south ends of the PRB wall. These wells should be located near the ends of the wall, but not in the wall material itself, and should intercept groundwater flow paths passing the ends of the wall. Table 3-2 shows TCE concentrations are increasing in wells MW51, 52, 53 and 54 compared to the baseline 2003 sample event. The locations of these wells (Figure 3-7) and the increasing concentration trends indicate the extent of contamination is not defined beyond these wells and that contamination may be moving toward the south end of the wall. Figure 3-7 shows that contamination is already beyond the north end of the wall.

I recommend the installation of a shallow and deep zone pair of monitoring wells in between the MW41/42 cluster and the MW47/48 cluster down gradient from the PRB as soon as possible.

Section 3.6.3.2 requests a reduction in the frequency of surface water samples. Monitoring frequency doesn't appear to be the issue. The data available from monitoring wells with less frequent sampling schedules is still sufficient to define long term trends. The data collected to date has determined that the plume of contaminated groundwater is discharging to surface water. What seems more important for future sampling events is to determine why TCE concentrations are increasing down gradient from the PRB in MW14 nearly 7 years after the PRB was installed. The travel distance from MW14 to the groundwater discharge area at the stream is short. Concentrations in future surface water samples may increase, but the problem originates farther up gradient and additional testing and sampling should focus more in that area.

The 2010 Annual Report discusses problems with water sample turbidity in numerous places and discusses the evaluation of low-flow sampling methods, particularly Section 3.6. Low-flow sampling methods should be used for samples submitted for VOC analysis. Low-flow sampling methods should achieve a turbidity level in samples submitted for metals analysis which is less than 10NTUs. Samples with turbidity levels greater than 10NTUs should not be sent to the laboratory. It is too easy to avoid false-positive analysis results caused by acid preservation of turbid samples. EPA recommends that sample collection crews be directed by the consultant to achieve 10NTUs in purge water, and record the time and turbidity of the water immediately before and again immediately after the sample is collected so there is no doubt regarding the turbidity of the sample in the bottle. Sample turbidity, pH conductivity, dissolved oxygen and oxidation/reduction potential readings should be reported on the same table with the metals analysis results so an interpretation of the metals data can be made.

I recommend that you consult a risk assessor regarding the vapor intrusion issues described in the 2010 Annual Report. I do not recommend that you accept recommendation in this report that vapor intrusion sampling never need be performed again.

I recommend that arsenic be considered a contaminant of concern (COC) at this site. This recommendation conflicts with statements in the 2010 Annual Report.

I recommend that MW2 be added to the site-wide sampling event scheduled for Spring, 2012.

COMMENT REGARDING THE MONITORING WELL SAMPLING SCHEDULE AND SAMPLE DATA MANAGEMENT:

The report states (PDF p. 10/231):

"Seven wells within the interior of the groundwater plume are sampled once every four years. This quadrennial event is scheduled to next occur in the spring of 2012. ... Table 1-1 provides a complete monitoring schedule for the Site."

Table 1-1 (PDF p. 55/231) shows the sampling locations for the Spring 2012 event. All locations will be sampled. A sampling event of this magnitude happens only once every 4 years. All maps and particularly all trend graphs will have to be up dated following this event. There will be a lot of data produced by the 2012 sample event.

Table 3-1 (PDF p. 58/231) in the 2010 report shows groundwater elevation measurements made since the 2009 report in bold print. Table 3-2 (PDF p. 71/231) in the 2010 report shows sample results for VOCs analyzed since the 2009 report in bold print. Additional data was scheduled to be collected in 2011, but the 2012 sample event will be huge compared to these other events.

I presented 12 contaminant concentration trend graphs in my memo regarding the 2009 Annual Report dated March 31, 2011. That memo was my first review for this site and required a lot of time and effort. With a few exceptions, I have not updated the trend graphs for this memo regarding the 2010 report because of the volume of data in Tables 3-1 and 3-2 which would have to be transcribed by hand from the tables. I believe the independent plotting of the data presented in my memo regarding the 2009 Annual Report provided EPAR4 with an interpretation of conditions at the site which was independent from the consultant's report.

I believe EPAR4 should perform an independent evaluation of the data and not rely solely on a consultant's presentation and interpretation of the sample results. EPAR4 receives data from dozens of different consulting companies, perhaps more. Each consulting company has their own style of data management. Sites remain under investigation by EPA and undergo remediation for decades, but consultants change from time to time and site-related data may be lost in this process. Therefore, EPAR4 must expect site related data to be delivered to EPAR4 in our data management format.

If you wish EPAR4 TSS to continue to provide you with an independent interpretation of the site data, the responsible party should be directed to provide sample analysis results, water level data and well construction information, etc., to EPAR4 in the EPAR4 digital data reporting format.

"All required information, instructions and guidance are available via the EPA web site www.epa.gov/region4/waste/sf/edd/edd.html free of charge. This web site contains links to obtain the required software, as well as the most recent versions of the Environmental Data Submissions Guidance, the Region 4 EDD Reference Guide, and the Region 4 EDP Reference Manual." (EPAR4, April 23, 2010, memo from Franklin Hill re: Region 4 Data Management and Electronic Data Deliverables).

Questions regarding electronic data submission or the guidance documents may be addressed to Beth Walden, Remedial Project Manager at (404) 562-8814 (walden.beth@epa.gov), or the DART Coordinator at (404) 562-8558 (R4dartcoordinator@epa.gov).

REGARDING INDOOR AIR INTRUSION OF CONTAMINATED VAPORS:

The 2010 Annual report states (PDF p.17/231) "... *sufficient indoor air sampling has occurred to confirm that this potential exposure pathway is incomplete*". Figure 1-6 shows the water table is 8-15 feet below the Main Plant Building. Figures 3-7 and 3-8 show the TCE concentration in groundwater beneath the Main Plant building is greater than 10 mg/L and more than 1 mg/L beneath the other buildings of the Main Plant area. The report states that indoor air sampling which occurred in 2003, 2004 and 2009 did not indicate vapor intrusion into the facility.

I have no knowledge of the kind of sampling performed in 2003, 2004 and 2009. But with cVOC concentrations in this range beneath the building, any modeled calculation of vapor intrusion potential is likely to show there is some potential risk. Therefore, I would not agree with previous EPA position as stated in the report that sampling "... *not need to be repeated again*". It is possible that the ventilation systems in the buildings prevent the accumulation of contaminated vapors and that the construction

inside the buildings does not contain areas where air flow might be restricted. However, I have no knowledge regarding the construction and ventilation systems of the Main Plant Building, Warehouse Buildings No.1 and 2 or any other smaller structures which may exist on the property.

Periodic sampling may be appropriate while a potential threat remains. I recommend that you consult a risk assessor regarding this issue.

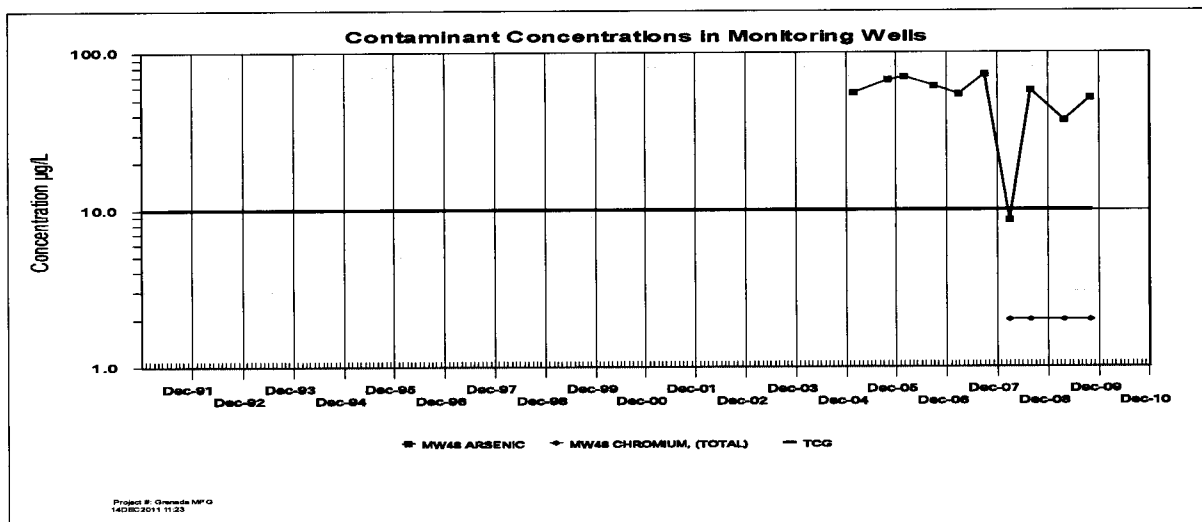
REGARDING ARSENIC CONCENTRATIONS IN GROUNDWATER:

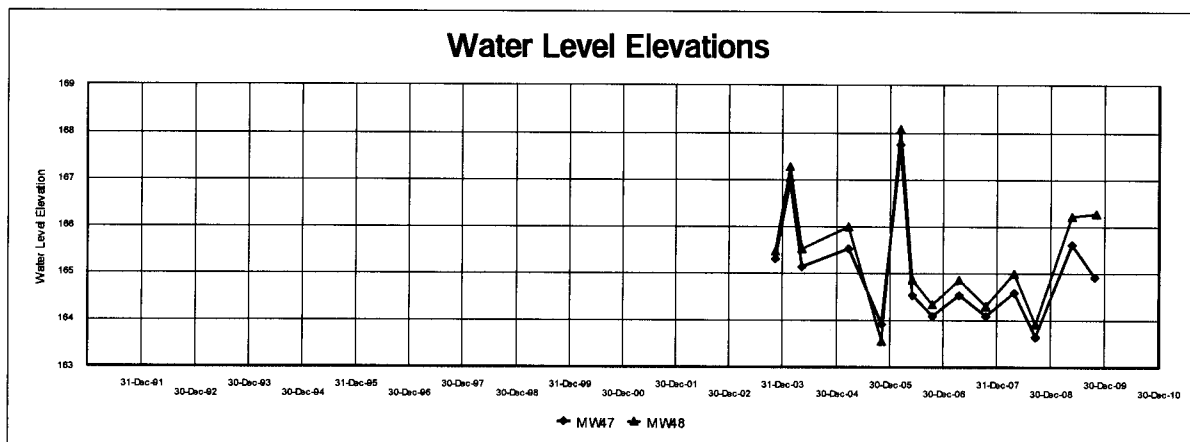
Well MW48 is screened in the deeper part of the upper aquifer down gradient from the PRB close to the stream which is the natural discharge area for groundwater from the site. MW48 is contaminated with arsenic at concentrations which exceed the MCL. The first graph below shows arsenic and chromium concentrations in groundwater from MW48 as reported in the 2009 Annual Report. Table 3-4 (PDF p. 108/231) in the 2010 Annual Report shows sample results for metals in MW48 analyzed since the 2009 report in bold print, but the graph has not been up dated. The second graph below shows water level elevations in the MW47 and MW48 well pair at this location. The deeper well MW48 of has an upward hydraulic gradient, as would be expected at a location close to the stream which is the natural discharge area for groundwater from the site. The upward hydraulic gradient is consistent with the conceptual site model shown on Figure 1-6 of the 2010 report. Contaminated groundwater from the vicinity of MW48 contains arsenic and the other contaminants (see Figure 3-6 and the tables for Section 3). The stream is the natural discharge area for groundwater in this area.

The Brown & Caldwell summary of the meeting with EPA on September 15, 2011 (USEPA Meeting Atlanta 9-15-2011.pptx Slide 19/20) concluded that "*Arsenic is not an issue for the site*", as does the 3rd bullet in Section 4 of the 2010 Annual Report. EPA did not reach this conclusion with Brown and Caldwell at the September 2011 meeting.

Arsenic has been observed to be elevated in groundwater down gradient from many other contaminated sites and, as noted on Slide 13/20, "*Where arsenic is elevated within the plume it can be attributed to reducing conditions (particularly downgradient of the PRB)*". But as at other sites, the reducing conditions are caused by releases of contamination from the site which would not have occurred if the release had not occurred. EPA does not agree that the data show background conditions for the site also show elevated arsenic concentrations.

Arsenic should be considered to be a Contaminant of Concern (COC) for this site with a target cleanup concentration equal to the EPA MCL for groundwater.





Farther up gradient along the stream near the MW41 and MW42 well pair, the upward vertical hydraulic gradient is weaker, but a strong downward hydraulic gradient is never apparent in the data up to 2009. But farther up gradient along the stream to MW14, there is no information regarding vertical hydraulic gradients or water quality in the deeper portion of the aquifer because there isn't a deep well paired with the shallow well MW14 (See Figure 2-1). But MW14 has the highest TCE concentrations down gradient from the PRB wall. Based on the TCE concentrations and the hydraulic gradients in other wells down gradient from the PRB, it seems likely that TCE is present in the deeper portion of the aquifer near MW14. A deep well should be installed in the vicinity of MW14.

REGARDING TCE CONCENTRATIONS IN WELLS DOWN GRADIENT FROM PRB WALL:

TCE concentrations exceed the MCL in MW14 and MW48.

cis-DCE and vinyl chloride concentrations exceed the MCL in MW14, MW42 and MW48.

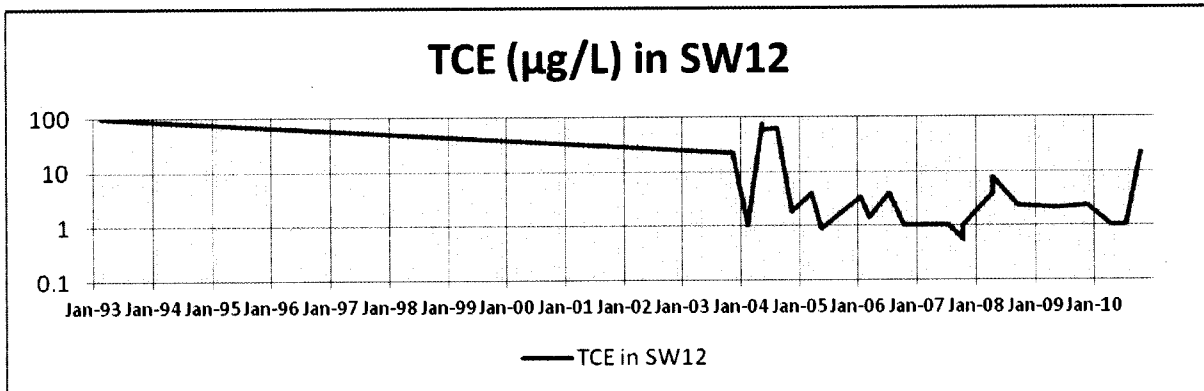
Arsenic concentrations exceed the MCL in MW14, and MW48. The highest arsenic concentration in MW14 was recorded in May 2009, 4 years after the PRB was installed.

All of these wells are down gradient from the PRB. Figures 3-1 through 3-4 all show the hydraulic gradient is steeper near the PRB than it is farther up gradient. Both the PRB and the stream influence the hydraulic gradient in this area. The PRB is, by definition and construction, permeable, so groundwater passes through the wall. Contaminant concentrations should be reduced in the wall, so increasing TCE concentrations in MW14 down gradient from the wall more than 5 years after the wall was installed is surprising.

The travel time between the PRB, MW14 and the stream is not presented in the 2010 report. But given that the distances are short and the hydraulic gradient is steep, increasing TCE concentrations in MW14 down gradient from the wall more than 5 years after the wall was installed is surprising.

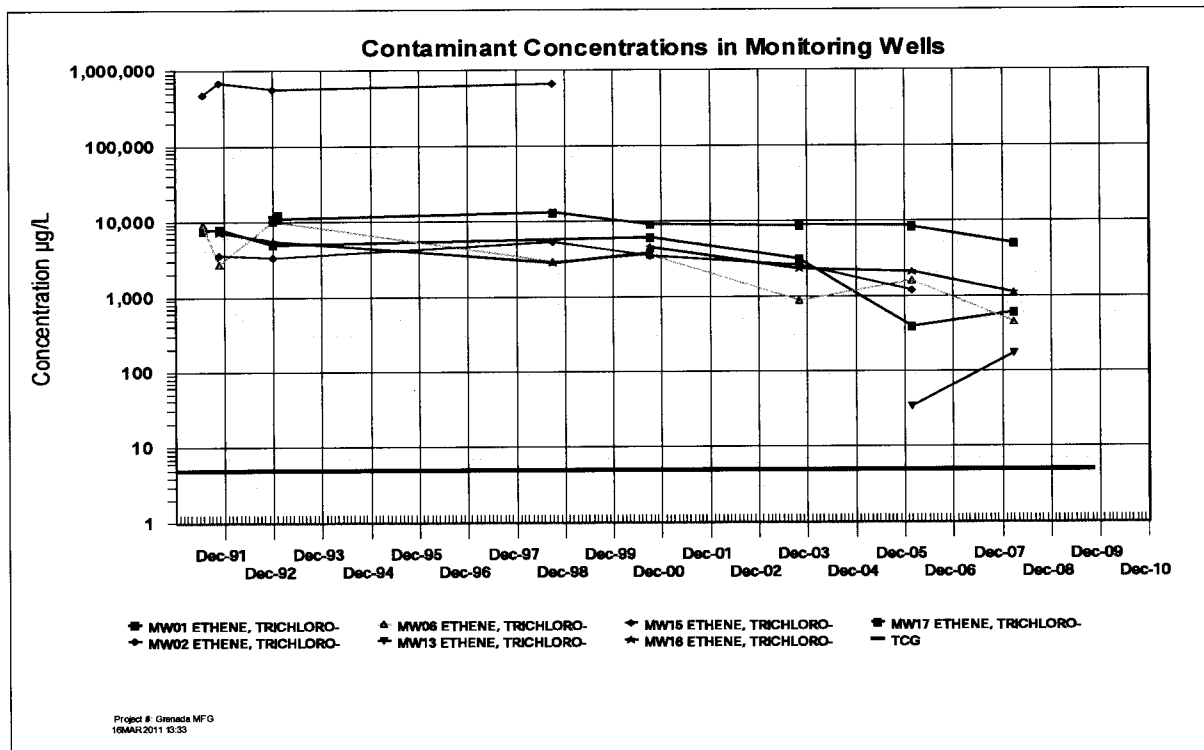
Contaminated groundwater down gradient from the PRB receives no treatment other than what occurs by natural attenuation. The surface water sample results presented in Table 3-8 (PDF p.125/231) from location SW12 (Figure 2-2) which is the closest surface water sampling location to MW14 show the TCE concentration in surface water was 21.6µg/L on October 2010.

The 2010 report states (p.3-5, PDF p.26/231) "TCE concentrations generally have remained consistent or decreased in samples from locations SW-9, SW-12, SW-17, and SW-19 since the PRB was installed." As stated, this is generally true, but the October 2010 sample and the duplicate sample from SW12 contained TCE at concentrations more similar to concentrations observed before the wall was installed than after (see graph below and also see the graph on PDF p.227/231 which shows the same data in a somewhat different form). Smaller increases in TCE concentrations also have occurred in recent samples from SW19 and SW9 (PDF p.227/231 and 228/231). The cause of the TCE increase in the October 2010 sample from the SW12 location is not clear at this time, but it seems like concentrations will increase more in the future based on the increasing TCE concentrations in MW14.



REGARDING TCE CONCENTRATIONS IN WELLS UP GRADIENT FROM PRB WALL:

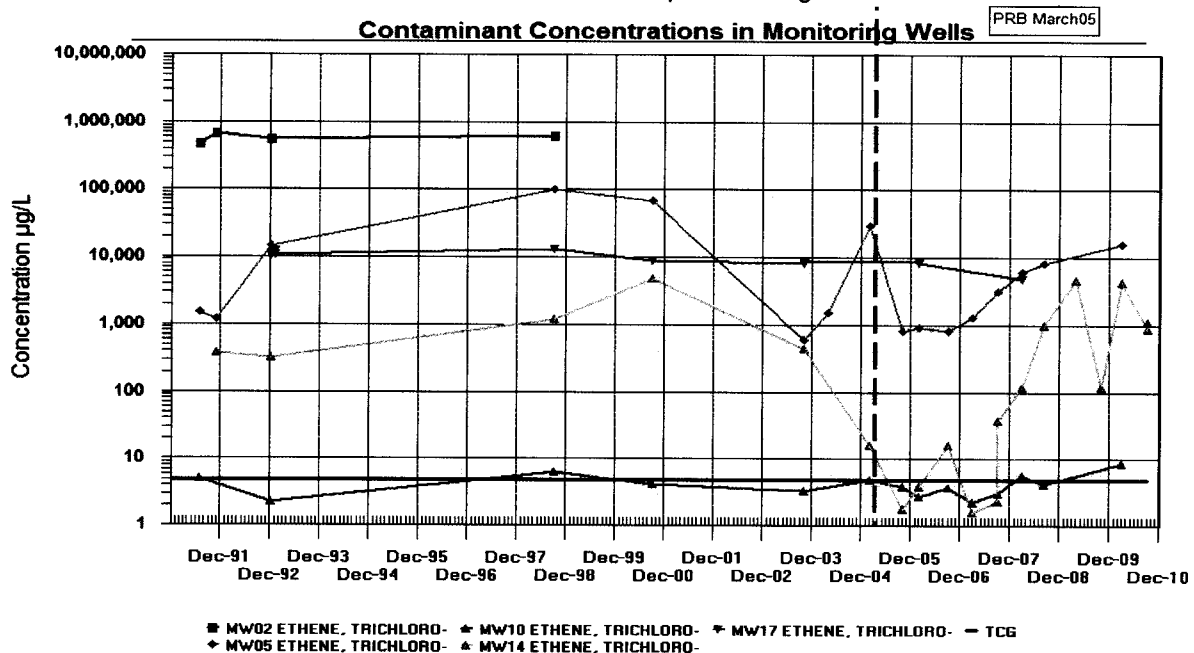
The Brown & Caldwell summary of a meeting with EPA on September 15, 2011 (USEPA Meeting Atlanta 9-15-2011.pptx Slide 19/20) stated "The CVOC concentrations in the plume body have declined significantly due to source control/treatment measures". The graph below copied from the March 31, 2011 memo regarding the 2009 report confirms that TCE concentrations in some wells up gradient from the PRB have declined an order of magnitude since sampling began.



But this is not true for all wells, and recent concentration trends cannot be determined in some wells, particularly MW02 and MW13. Well MW02, shown at the top of the figure above, is not included in the Site Wide Monitoring Schedule (Table 1-1 PDF p.55/231). Well MW2 has some history of NAPL contamination (Section 1.3.7 page 1-7, PDF p.15/231), but the well has not been sampled for more than 11 years. MW2 is a shallow well located near deeper well MW17 on the west side of the SWMU 4 Sludge Lagoon (Figure 3-1). MW17 is the 2nd most contaminated well shown on the graph above. It was sampled in the last Quadrennial event and is scheduled on Table 1-1 to be sampled in Spring 2012. MW2 should be added to the site-wide sampling event scheduled for Spring, 2012.

The nearest down gradient well (MW5) is more than 500 feet away from MW2 and MW17. TCE concentrations in this well have increased since the PRB was installed to about 16,000µg/L (Table 3-2 PDF p.71/231). TCE concentrations also are increasing on the other side of the PRB at this location down gradient from MW5 at well MW14.

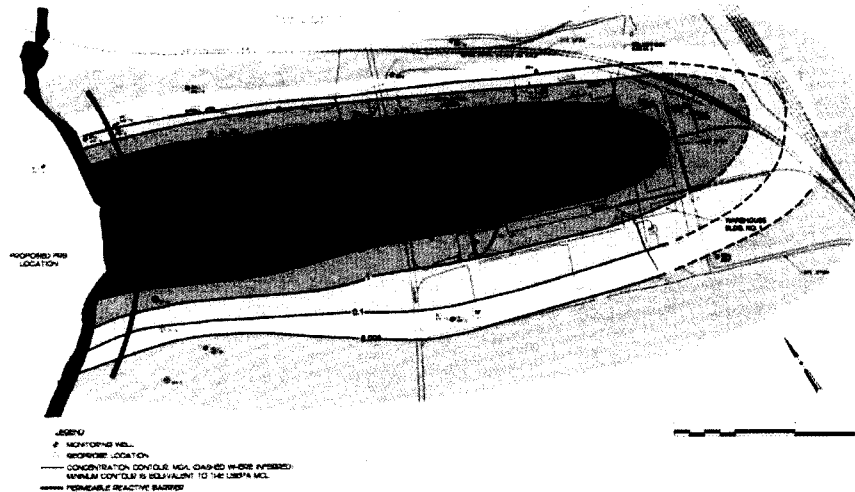
The contaminant concentration trends in wells MW2, 5, 14, 17 and SW12 have not shown a clear and meaningful decrease in TCE concentrations during the history of the sampling program. The monitoring wells in this highly contaminated portion of the plume are far apart, and the increasing TCE concentrations on both sides of the PRB beginning shortly after the installation of the PRB suggest the wall may have already failed in this area (see graph below). Note the stability of TCE concentrations in MW2 and 17; little progress toward cleanup is apparent in these wells. Note MW5 and MW14 both have increasing TCE concentrations since the PRB was installed and that TCE concentrations in MW14 after the wall installation are as high as ever. Note also that TCE concentrations in MW10 are higher than ever before. MW10 is a shallow well near what should be the edge of the plume, so the increasing concentration in this well, though small, are surprising. Note also that there no deep well near the MW14 location. Selected data from Table 3-2 has been used to update this figure.



Project # Grenada MFG
14DEC2011 10:54

The plume maps presented by Brown & Caldwell in the meeting with EPA on September 15, 2011 (USEPA Meeting Atlanta 9-15-2011.pptx Slides 5 and 6 copied below) show the distribution of the TCE plume in the lower and upper portions of the aquifer before the PRB was installed.

Lower Aquifer TCE Concentration Map 2004 – Prior to PRB Installation

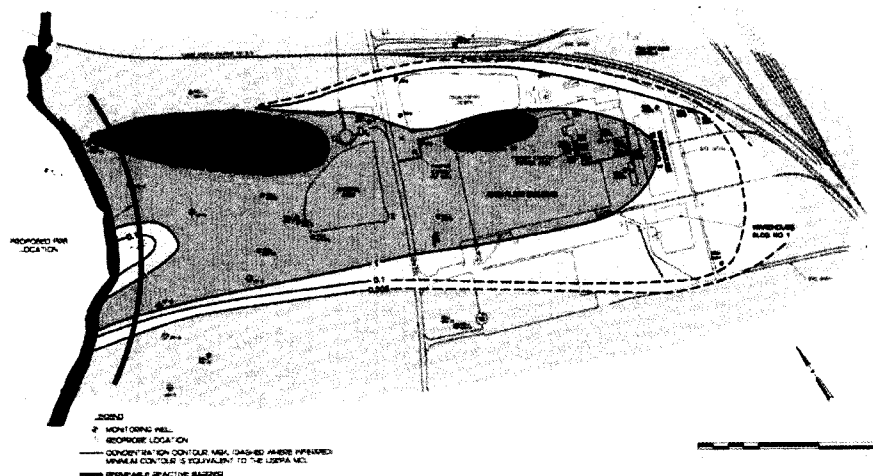


Brown & Caldwell

U.S. EPA Meeting - September 18, 2011

In the map above, all of the wells plotted in the trend graph above (MW2, 5, 10, 14 and 17) are located on the northern edge of the plume. Up gradient from the PRB, increasing TCE concentrations in this area particularly at MW5 and MW10 may mean the plume is trying to move around the north end of the wall.

Upper Aquifer TCE Concentration Map 2004 – Prior to PRB Installation



Brown & Caldwell

U.S. EPA Meeting - September 18, 2011

In the upper aquifer, the plume is not defined toward the north end of the wall and the concentration increase in MW10 may indicate contaminant movement in the shallow aquifer toward the north end of the

wall. But TCE concentrations are less in the upper aquifer and the increase in MW10 is comparatively small.

None of these interpretations appear to explain the TCE concentration trends at MW14, which is down gradient from the PRB where concentrations should be decreasing. I am concerned about the performance of the PRB in this area.

Based on the delivery schedule of the 2009 and 2010 Annual Reports to EPA, the data from the Spring 2012 sampling event won't be available until the middle or end of 2013. Wells MW5 and MW10 are the only wells of this group which were scheduled to have been sampled in the 2011 event (Table 1-1 PDF p.55/231). I recommend that EPA ask to see these data from the 2011 sampling event as soon as possible.

I recommend that EPA request the installation of a deep zone monitoring near MW14.

I recommend that EPA request the installation of a shallow and deep zone pair of monitoring wells in between the MW41/42 cluster and the MW47/48 cluster down gradient from the PRB.

Pressley, Miriam

From: Anderson, Meredith
Sent: Thursday, March 28, 2013 3:31 PM
To: O'Connor, David A.
Cc: Ihsan Alfayyomi; James Peeples; Jeff DeLaet
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Thank you for your very informative update! (It appears that we can make much more progress via email vs exchanging many phone messages!)

I will be in FL for spring break (St. George Island this time) on April 10, but am available anytime April 15, 16, or 18. Do any of these dates work for you and your team?

Meredith

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Thursday, March 28, 2013 3:12 PM
To: Anderson, Meredith
Cc: Ihsan Alfayyomi; James Peeples; Jeff DeLaet
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Meredith:

I had a conference call with Jim Peeples and Jeff DeLaet yesterday to discuss progress at the Grenada site as well as timing for additional work at the site. Below are responses to your questions in the March 26th email.

T&M will be combining semi-annual groundwater sampling activities with the implementation of the *Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan*. We have received authorization from the railroad company to proceed with the work on their property but the hold up now is with Mississippi DOT with regards to work west of Highway 332. We feel confident that will receive authorization within the next 2-4 weeks and therefore are looking to begin work mid-May. When we set the specific start date, we will notify you via email and provide a general outline of each day's planned activities.

PRB investigation-related activities are ongoing, but the preliminary findings from the Oct. 2012 investigation will be discussed in the 2012 Annual Report. We propose to use the 2012 Annual Report as the mechanism for providing an update on Site conditions, presenting the findings of the new wells and borings completed in the vicinity of the PRB, as well as summarizing the work completed in the test area at the PRB. Although the draft 2012 Annual Report is complete, our preference is to receive USEPA's comments on the 2011 Annual Report before submitting the 2012 Annual Report in case there are items from that review that we would want to incorporate into the 2012 Annual Report. To this end, and per your request, an electronic copy of the 2011 Annual Report will be forwarded to you for your review/comment (I have asked Jim and Jeff to provide you a link in a separate email to download this report).

The Oct. 2012 field effort and ongoing data collection activities have yielded some valuable information. As mentioned above, the key findings will be provided in the 2012 Annual Report. Moreover, we will provide you a summary of the key findings and future activities during your suggested conference call noted in your email. Let me know if Wednesday April 10th is a good date for such a call (provide me preferred times); if not, please suggest alternative dates and times.

T&M received the needed instructions from Region IV for uploading data to EPA's DART system. T&M anticipates completing the upload by end of next week (April 5th). It is my understanding from Jim Peeples that data uploading was successful when he was at Brown and Caldwell and that the main issue now is that T&M required a Supplier/Vendor Code that has delayed this process to date.

I recall you mentioning that Dave was retiring, but didn't know exactly when. He provided valuable comments and suggestions and was a very good technical resource.



David A. O'Connor
Corporate Environmental Manager
Environmental, Health and Safety Department
248.435.2706 tel cel

(b)(6)

Meritor, Inc.
2135 West Maple Road
Troy, Michigan 48064 USA
meritor.com

From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]
Sent: Tuesday, March 26, 2013 2:32 PM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Dave,

Any word on when this work will take place? Also, can you give me an update on when the data from the Oct investigation at the PRB will be available? What is the current status of the evaluation of the PRB? This may be a good time to have a team conference call to check-in on how things are progressing. Let me know when a good time would be, if you think this would be helpful.

Other questions: Has the upload of data to EPA's DART system been successful (I am having issues with this at another site)? Can you provide me with an electronic copy of the 2011 Monitoring Report? Did I tell you that Dave Jenkins retired at the end of Jan?

Thanks for an update.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

From: Jeff DeLaet [<mailto:JDelaet@tandmassociates.com>]
Sent: Tuesday, March 12, 2013 10:56 AM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

Thank you for the e-mail, and greatly appreciate your very timely response. When we lock in the date(s) of the field sampling, I will be sure to give you advanced notice so you can make the appropriate arrangements for EPA oversight.

Regards, JDD

Jeff DeLaet, PE
Principal Engineer



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From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]
Sent: Tuesday, March 12, 2013 10:49 AM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Thank you for your response presented below to the EPA comments on the MW-20 Report. I have reviewed the response and the red-lined report and feel that my comments have been adequately addressed. My only observation is that the location of one new soil gas sample (Figure 3-1; sample located south of MW-20-W1) was not located where I had suggested – I was suggesting that it be located on the east side of Hwy 332 to provide information about the gw-to-soil gas pathway near the residence at the edge of the neighborhood. I am fine with the proposed location, however, if you have other technical reasons for this alternate location.

Please contact me if you would like to discuss this further. Also, please inform me of your sampling schedule so that I can schedule EPA oversight. Thank you.

Meredith Anderson

Environmental Engineer
EPA-RCRA/Corrective Action
404-562-8608

From: Jeff DeLaet [mailto:JDeLaet@tandmassociates.com]

Sent: Friday, March 08, 2013 3:33 PM

To: Anderson, Meredith

Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peeples

Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

On behalf of Meritor, Inc. (Meritor), please find attached the written response to EPA's comments on the *MW-20 Area Investigation Report and Additional Investigation Work Plan* (T&M Associates, December 2012), which was submitted via email dated February 25, 2013 to Mr. David O'Connor of Meritor. Also attached is a "redline" of the Work Plan to assist you in reviewing where revisions/additions have been made to the Work Plan. Based on EPA's comments.

Upon your review of the attached documents, please advise Dave O'Connor (Meritor) that the Work Plan can be finalized. At such time, I will distribute the necessary hard copies of the final Work Plan to you and those individuals copied on this email.

Have a good weekend, JDD

Jeff DeLaet, PE
Principal Engineer



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Pressley, Miriam

From: Anderson, Meredith
Sent: Thursday, March 28, 2013 6:21 PM
To: James Peeples
Subject: RE: Grenada CY2011 Annual Report

Thank you – got it.

From: James Peeples [mailto:JPeeples@tandmassociates.com]
Sent: Thursday, March 28, 2013 6:08 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Jeff DeLaet; Ihsan Alfayyomi
Subject: Grenada CY2011 Annual Report

Meredith,

Please use the link listed below to download the 2011 Annual Report for the Grenada Manufacturing Site in Grenada, Mississippi. If you have any problems downloading the file, please let me know.

Here's the link to this file:

<http://www.yousendit.com/download/UVJqZGVRyTJTRTdsZThUQw>

Sincerely,

James Peeples, PE
Principal Engineer



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For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

***** ATTACHMENT NOT DELIVERED *****

Pressley, Miriam

From: Anderson, Meredith
Sent: Monday, April 1, 2013 5:42 PM
To: Chowdhury, Sabina [USA]
Subject: FW: Grenada MW-20 Investigat
Attachments: MW-20_Area _Investigation_Report_and_Workplan_FINAL.pdf

FYI

From: James Peeples [mailto:JPeebles@tandmassociates.com]
Sent: Monday, April 01, 2013 5:23 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Jeff DeLaet; Ihsan Alfayyomi; Cynthia M. Jacobsen
Subject: Grenada MW-20 Investigat

Meredith,

Please find attached an electronic copy of the final MW-20 Area Investigation Report and Work Plan for the Grenada Manufacturing Facility in Grenada, Mississippi. We have incorporated the changes as indicated in our responses to your comments and accepted the changes shown in the redline copy you recently reviewed. This electronic copy will be followed up with two hard copies for your use.

Please let me know if you have any questions regarding the report or the upcoming investigation. We should have a final schedule for the investigation soon and will forward that on to you as soon as it is ready.

Sincerely,

James Peeples, PE

T&M Associates

(Mobile) (b)(6)
(614) 766-3668 (Office)

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Pressley, Miriam

From: Anderson, Meredith
Sent: Monday, April 1, 2013 5:49 PM
To: Chowdhury, Sabina [USA]
Subject: RE: [External] FW: Grenada MW-20 Investigat

Yes, thanks for reminding me. It will be Tuesday, April 16 at 11 EST.

Conference dial-in number:

(b)(5)

Access code:

I will be out of the office all next week, returning on April 15. I'll touch base with you then. Thanks.
Meredith

From: Chowdhury, Sabina [USA] [mailto:chowdhury_sabina@bah.com]
Sent: Monday, April 01, 2013 5:45 PM
To: Anderson, Meredith
Subject: RE: [External] FW: Grenada MW-20 Investigat

Thanks Meredith. Do you have the date set for the call yet?

Sabina Chowdhury

(210)244-4241

cell

(b)(6)

From: Anderson, Meredith [mailto:Anderson.Meredith@epa.gov]
Sent: Monday, April 01, 2013 4:42 PM
To: Chowdhury, Sabina [USA]
Subject: [External] FW: Grenada MW-20 Investigat

FYI

From: James Peeples [mailto:JPeeples@tandmassociates.com]
Sent: Monday, April 01, 2013 5:23 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Jeff DeLaet; Ihsan Alfayyomi; Cynthia M. Jacobsen
Subject: Grenada MW-20 Investigat

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Please let me know if you have any questions regarding the report or the upcoming investigation. We should have a final schedule for the investigation soon and will forward that on to you as soon as it is ready.

Sincerely,

James Peeples, PE

T&M Associates

(Mobile)

(614) 766-3668 (Office)

(b)(6)

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Pressley, Miriam

From: Anderson, Meredith
Sent: Thursday, April 4, 2013 3:44 PM
To: Chowdhury, Sabina [USA]
Subject: RE: [External] FW: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Yes, it is included in the MW-20 Work Plan for the October investigation. I think I already sent that to you, but will look for it again.

From: Chowdhury, Sabina [USA] [mailto:chowdhury_sabina@bah.com]
Sent: Thursday, April 04, 2013 11:40 AM
To: Anderson, Meredith
Subject: RE: [External] FW: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hello Meredith

Is there a Work Plan available for the ongoing PRB investigation-related activities? I see that the results will be discussed in the 2012 report, but I wanted to see the plan to so see how they plan to implement the recommendations your senior hydrologist David Jenkins' recommendations.

Thanks!
Sabina

Sabina Chowdhury
(210)244-4241
cell (b)(6)

From: Anderson, Meredith [mailto:Anderson.Meredith@epa.gov]
Sent: Thursday, March 28, 2013 2:47 PM
To: Chowdhury, Sabina [USA]
Subject: [External] FW: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Received a very informative update on Grenada; see below. I cannot have a conference call with them on April 10 (as they have proposed) and have suggested alternative dates - Are you available on April 15, 16, or 18?

Thank you.
Meredith

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Thursday, March 28, 2013 3:12 PM
To: Anderson, Meredith
Cc: Ihsan Alfayyomi; James Peeples; Jeff DeLaet
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Meredith:

I had a conference call with Jim Peeples and Jeff DeLaet yesterday to discuss progress at the Grenada site as well as timing for additional work at the site. Below are responses to your questions in the March 26th email.

T&M will be combining semi-annual groundwater sampling activities with the implementation of the *Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan*. We have received authorization from the railroad company to proceed with the work on their property but the hold up now is with Mississippi DOT with regards to work west of Highway 332. We feel confident that will receive authorization within the next 2-4 weeks and therefore are looking to begin work mid-May. When we set the specific start date, we will notify you via email and provide a general outline of each day's planned activities.

PRB investigation-related activities are ongoing, but the preliminary findings from the Oct. 2012 investigation will be discussed in the 2012 Annual Report. We propose to use the 2012 Annual Report as the mechanism for providing an update on Site conditions, presenting the findings of the new wells and borings completed in the vicinity of the PRB, as well as summarizing the work completed in the test area at the PRB. Although the draft 2012 Annual Report is complete, our preference is to receive USEPA's comments on the 2011 Annual Report before submitting the 2012 Annual Report in case there are items from that review that we would want to incorporate into the 2012 Annual Report. To this end, and per your request, an electronic copy of the 2011 Annual Report will be forwarded to you for your review/comment (I have asked Jim and Jeff to provide you a link in a separate email to download this report).

The Oct. 2012 field effort and ongoing data collection activities have yielded some valuable information. As mentioned above, the key findings will be provided in the 2012 Annual Report. Moreover, we will provide you a summary of the key findings and future activities during your suggested conference call noted in your email. Let me know if Wednesday April 10th is a good date for such a call (provide me preferred times); if not, please suggest alternative dates and times.

T&M received the needed instructions from Region IV for uploading data to EPA's DART system. T&M anticipates completing the upload by end of next week (April 5th). It is my understanding from Jim Peebles that data uploading was successful when he was at Brown and Caldwell and that the main issue now is that T&M required a Supplier/Vendor Code that has delayed this process to date.

I recall you mentioning that Dave was retiring, but didn't know exactly when. He provided valuable comments and suggestions and was a very good technical resource.



David A. O'Connor
Corporate Environmental Manager
Environmental, Health and Safety Department
248.435.2706 tel

(b)(6)

Meritor, Inc.
2135 West Maple Road
Troy, Michigan 48084 USA
meritor.com

From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]

Sent: Tuesday, March 26, 2013 2:32 PM

To: Jeff DeLaet

Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles

Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Dave,

Any word on when this work will take place? Also, can you give me an update on when the data from the Oct investigation at the PRB will be available? What is the current status of the evaluation of the PRB? This may be a good time to have a team conference call to check-in on how things are progressing. Let me know when a good time would be, if you think this would be helpful.

Other questions: Has the upload of data to EPA's DART system been successful (I am having issues with this at another site)? Can you provide me with an electronic copy of the 2011 Monitoring Report? Did I tell you that Dave Jenkins retired at the end of Jan?

Thanks for an update.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

From: Jeff DeLaet [<mailto:JDelaet@tandmassociates.com>]
Sent: Tuesday, March 12, 2013 10:56 AM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

Thank you for the e-mail, and greatly appreciate your very timely response. When we lock in the date(s) of the field sampling, I will be sure to give you advanced notice so you can make the appropriate arrangements for EPA oversight.

Regards, JDD

Jeff DeLaet, PE
Principal Engineer



300 E-Business Way, Suite 200
Cincinnati, Ohio 45241
(513) 247-6120

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www.tandmassociates.com

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From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]
Sent: Tuesday, March 12, 2013 10:49 AM
To: Jeff DeLaet
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: RE: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Thank you for your response presented below to the EPA comments on the MW-20 Report. I have reviewed the response and the red-lined report and feel that my comments have been adequately addressed. My only observation is that the location of one new soil gas sample (Figure 3-1; sample located south of MW-20-W1) was not located where I had suggested – I was suggesting that it be located on the east side of Hwy 332 to provide information about the gw-to-soil gas pathway near the residence at the edge of the neighborhood. I am fine with the proposed location, however, if you have other technical reasons for this alternate location.

Please contact me if you would like to discuss this further. Also, please inform me of your sampling schedule so that I can schedule EPA oversight. Thank you.

Meredith Anderson
Environmental Engineer
EPA-RCRA/Corrective Action
404-562-8608

From: Jeff DeLaet [<mailto:JDelaet@tandmassociates.com>]
Sent: Friday, March 08, 2013 3:33 PM
To: Anderson, Meredith
Cc: O'Connor, David A.; Ihsan Alfayyomi; James Peebles
Subject: Grenada MW-20 Area Investigation Report and Additional Investigation Work Plan - EPA review comments

Hi Meredith:

On behalf of Meritor, Inc. (Meritor), please find attached the written response to EPA's comments on the *MW-20 Area Investigation Report and Additional Investigation Work Plan* (T&M Associates, December 2012), which was submitted via email dated February 25, 2013 to Mr. David O'Connor of Meritor. Also attached is a "redline" of the Work Plan to assist you in reviewing where revisions/additions have been made to the Work Plan. Based on EPA's comments.

Upon your review of the attached documents, please advise Dave O'Connor (Meritor) that the Work Plan can be finalized. At such time, I will distribute the necessary hard copies of the final Work Plan to you and those individuals copied on this email.

Have a good weekend, JDD

Jeff DeLaet, PE
Principal Engineer



300 E-Business Way, Suite 200
Cincinnati, Ohio 45241
(513) 247-6120

--- (Mobile) (b)(6)

www.tandmassociates.com

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Pressley, Miriam

From: Anderson, Meredith
Sent: Thursday, April 4, 2013 3:51 PM
To: Chowdhury, Sabina [USA]
Subject: FW: MW-20 Work Plan and Addendum (Final)
Attachments: MW-20 Work Plan and Addendum_September 2012.pdf

See Addendum of the attached.

From: Meredith Anderson [mailto:Anderson.Meredith@epamail.epa.gov]
Sent: Thursday, April 04, 2013 3:47 PM
To: Anderson, Meredith
Subject: Fw: MW-20 Work Plan and Addendum (Final)

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

----- Forwarded by Meredith Anderson/R4/USEPA/US on 04/04/2013 03:47 PM -----

From: "O'Connor, David A." <David.OConnor@Meritor.com>
To: Meredith Anderson/R4/USEPA/US@EPA
Cc: "James A. Peeples" <JPeebles@tandmassociates.com>
Date: 09/17/2012 04:40 PM
Subject: MW-20 Work Plan and Addendum (Final)

Meredith:

Attached, for your records, is the subject finalized plan for the Grenada site. Thank you for the quick review and approval of the plan following our discussions.

I will provide you a schedule of the proposed work shortly . Please call me with any questions.



David A. O'Connor
Corporate Environmental
Manager
Environmental, Health and Safety
Department
248.435.2706
tel (b)(6) cel

Meritor, Inc.
2135 West Maple Road
Troy, Michigan 48064 USA
meritor.com

From: Meredith Anderson [<mailto:Anderson.Meredith@epamail.epa.gov>]
Sent: Friday, September 14, 2012 5:03 PM
To: O'Connor, David A.
Cc: James A. Peeples
Subject: EPA Approval - MW-20 Work Plan and Addendum

Thanks, Dave. Everything looks good. This work plan is approved with the changes noted.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

"O'Connor, David A." ---09/14/2012 04:34:32 PM---Meredith:

From: "O'Connor, David A." <David.OConnor@Meritor.com>
To: Meredith Anderson/R4/USEPA/US@EPA
Cc: "James A. Peeples" <JPeebles@tandmassociates.com>
Date: 09/14/2012 04:34 PM
Subject: Grenada - MW-20 Work Plan and Addendum

Meredith:

Attached is the revised Plan with proposed Redline changes per our communications earlier this week. If you formally approve the plan, we will issue a Final Plan and begin the planning process to install the wells.

Contact me with any questions. Have a nice weekend.



David A. O'Connor
*Corporate Environmental
Manager
Environmental, Health and
Safety Department*

248.435.2706 tel

cel (b)(6)

Meritor, Inc.

2135 West Maple Road
Troy, Michigan 48064 USA
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MW-20 Area Investigation
Work Plan
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

September 2012

TM
ASSOCIATES

545 Metro Place South
Dublin, Ohio 43017

MW-20 Area Investigation Work Plan
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

September 2012

140539.270

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Figure 1-2	Spring 2010 TCE Concentrations Upper Most Aquifer (Shallow Wells)
Figure 1-3	Spring 2010 Potentiometric Surface Upper Most Aquifer Shallow Wells
Figure 2-1	Proposed Well Locations

Section 1

Introduction

Groundwater monitoring has been conducted at the ICE Industries, Inc. (ICE) facility (the “Site”) in Grenada, Mississippi (Figure 1-1) since 1993. Groundwater samples collected from monitoring well MW-20 have historically contained low levels of volatile organic compounds (VOCs). During the most recent groundwater sampling event, conducted in the fall of 2011, the analytical results for the groundwater sample from this well were measured at 86 micrograms per liter ($\mu\text{g/L}$) of trichloroethene (TCE), 88 $\mu\text{g/L}$ of cis-1,2-dichloroethene (cis DCE), and less than 1 $\mu\text{g/L}$ of vinyl chloride. These concentrations are consistent with past sampling events. Figure 1-2, taken from the 2010 Annual Report, shows the estimated extent of TCE in Upper Zone groundwater. Figure 1-3, also from the 2010 Annual Report, is the Upper Zone Potentiometric Surface map. Upper Zone groundwater flow in the MW-20 area is northwestward, toward Riverdale Creek.

In comments regarding the 2009 Annual Monitoring Report, the United States Environmental Protection Agency (USEPA) indicated that work should be conducted to better define the extent of groundwater impact in the vicinity of well MW-20. Meritor will investigate the extent of groundwater impact near this location, and the Work Plan provided in this submittal describes the methods that will be used to complete the investigation. Upon approval of this Work Plan, Meritor will install an additional well or wells to better define the extent of VOC impact in the northern portion of the groundwater plume, particularly in the MW-20 area.

1.1 Facility History

The Grenada manufacturing facility was constructed by Lyon in 1961 and sold to Rockwell International, Inc. (Rockwell) in 1966. The Automotive Division of Rockwell operated a wheel cover manufacturing facility at the Site from 1966 to 1985, when the plant and property were sold to Textron Automotive Company (Textron), formerly Randall Textron. In 1997, Rockwell spun off its Automotive Division into a corporate predecessor to Meritor, Inc. In 1999, Textron sold the operations and property to Collins and Aikman Corporation, which later transferred the operation to Grenada Manufacturing, LLC (Grenada Manufacturing). In 2008, the plant and property were sold (and leased in part) to ICE.

Throughout much of its history, the facility was used to manufacture automobile wheel covers. Following the acquisition of the Site by ICE, the facility was converted to a stamping plant, providing stamp-formed parts for various industries.

1.2 Summary of Site Remedial Actions

Remedial activities at the Site began in 1990 when waste from the former on-site landfill (SWMU 3) was excavated for off-site disposal, and remediation has continued through 2010 with closure of the former Sludge Lagoon (SWMU 4). The remedial measures have either occurred as interim measures or within the framework of the RCRA Facility Investigation and Corrective Measures Study for the Site. Descriptions of the remedial measures performed are presented in the 2010 Annual Report. The 2010 Annual Report identifies additional documents that can be referenced to obtain further information regarding remedial measures that have been completed at the Site.

1.3 Site Conceptual Model

The stratigraphy at the Site is comprised of a surficial unit containing approximately 8 to 15 feet of clayey silt or silty clay overlying approximately 30 to 50 feet of saturated, fine to medium-grained sands that contain varying amounts of silt. Together, these soils are referred to as the "Upper Aquifer". Within the vicinity of the Main Plant, the sand unit is bisected by a discontinuous clay unit at a depth of 20 to 30 feet below ground surface (bgs). This clay unit was not observed in the western portion of the Site or in the vicinity of the Permeable Reactive Barrier near Riverdale Creek. At the base of the Upper Aquifer the sand unit is a thinly-bedded, slightly-sandy, clayey, silt, which is encountered at depths ranging from 47 to 60 feet bgs and serves as an intermediate confining unit, acting as an aquitard to separate the upper and lower aquifers. This layer is approximately 16 feet thick and has been identified as marl exhibiting much higher blow counts than the overlying soils. Below this unit is another sand layer that comprises the "Lower Aquifer", which is not impacted by VOCs present in the upper aquifer.

The Upper Aquifer is the primary horizontal transport pathway for the Site. Groundwater in this aquifer is generally under semi-confined conditions, flows to the northwest, and discharges into Riverdale Creek. It is believed that Riverdale Creek is in direct communication with the Upper Aquifer, and is a gaining stream in this area.

1.4 Work Plan Organization

The remainder of this Work Plan describes the methods to be used to seek to delineate the northern extent of VOC impact in groundwater. All work will be conducted in accordance with the Site-specific Health and Safety Plan and the approved Quality Assurance Project Plan (QAPP) for this Site.

Section 2

MW-20 Area Investigation

2.1 New Well Locations

MW-20 is located near the south edge of a gravel road that runs parallel to railroad tracks and the northern boundary of the Site. This road is used by trucks hauling material to and from the Dunham, Inc. yard located northeast of the Site. Dunham has an easement with the Grenada Railway to use the haul road. North of the haul road are residential properties with back yards that are close to the haul road (Figure 2-1). The residential property lines are adjacent to the north side of the haul road, although the exact property boundaries are not known. The distance from MW-20 to the nearest house is approximately 80 feet.

MW-20 is located 38 feet south of the nearest resident's fence. The distance between the road and the residential fence north of MW-20 is approximately 10 feet. Overhead electric lines running parallel to the north side of the haul road are approximately 12 feet from the road. Therefore, there is very limited access to a suitable drilling location north of MW-20. A boring will be installed north of MW-20 as close to the overhead power lines as can be accomplished safely.

If the groundwater sample collected north of MW-20 is found to contain VOCs at or above MCLs, the boring will be abandoned, and the northern extent of impact in the vicinity of MW-20 will be evaluated using wells installed east and west of the MW-20 location (Figure 2-1). The eastern location is on the north side of the haul road, south of the residential area. The western location is on the west side of Route 332, north of the railroad crossing. Taken together with the potentiometric surface, the groundwater concentrations of VOCs at the locations described above should enable delineation of VOC impact in the northern part of the plume near MW-20.

Utilities will be marked in areas where borings will be installed. BC will contact the State of Mississippi to coordinate work in the Route 332 right-of-way, and is currently in contact with Grenada Railway regarding access to the east location and the location north of well MW-20.

2.2 Groundwater Investigation

The groundwater investigation will proceed in the following manner:

1. The boring location north of MW-20 (Figure 2-1) will be installed and a depth series of groundwater samples will be collected through the Geoprobe® tooling and field screened using the Color-Tec® field screening methodology. A groundwater sample from the vertical zone with the highest field screening value will be sent to a laboratory for VOC analysis. The sample will be analyzed with a 24-hour turn-around time for analysis. If the analysis of the sample and/or the field screening indicates exceedances of one or more MCLs, the boring will be abandoned and the investigation will proceed in the areas east and west of MW-20 as described in step number 2, below. If the analytical results indicate no exceedances of MCLs, a replacement well for MW-20 will be installed, developed and sampled at this boring location; and steps 2 through 4, below, will not apply. Well MW-20 will be maintained and the new well will replace MW-20 in the sampling program and act as the new northern sentinel well for the groundwater monitoring program. The well will be labeled MW-20R, and will be sampled at the frequency indicated for MW-20 in the sampling plan (following the initial sample obtained for this investigation). The existing

well MW-20 will be added to the group of wells that are sampled quadrennially until it can be demonstrated that it is no longer needed in the sampling program.

2. If the analytical results for the groundwater sample obtained from the boring north of MW-20 indicate an exceedance of MCLs for one or more VOCs, the groundwater investigation will proceed by evaluating groundwater at locations upgradient (east) and downgradient (west) of MW-20.
3. A series of three direct-push soil borings will be advanced at the east and west locations shown on Figure 2-1. The borings will be used to better define the nature and extent of VOC impact at these two locations and to select appropriate locations to install sentinel wells.
4. The sampling frequency for wells installed east and west of MW-20 will follow the timing that well MW-20 is sampled (based on the groundwater monitoring program). Well MW-20 will remain in the sampling program (unless the location to the north of MW-20 is found to be unaffected by VOCs above MCLs, as discussed in step 1, above).

2.3 Installation and Sampling Methods

Prior to completion of any borings, utilities in the affected areas will be marked. BC will contact the state of Mississippi to coordinate work in the Route 332 right-of-way, and is currently in contact with Grenada Railway regarding access to the east location and the location north of MW-20.

For all boring locations, a Waterloo Sampler® will be advanced using a Geoprobe® until the screened portion of the sampler enters the water table. The first groundwater sample will be obtained from the Waterloo Sampler® (at the water table) and the sample will be field-screened using Color-Tec® methods to detect the presence of VOCs. A groundwater sample will also be collected from the interval for potential laboratory analysis. The Waterloo Sampler® will then be advanced two feet further into the aquifer and this procedure will be repeated. Sampling will continue as described above until reaching a depth of 25 feet, or 15 feet into the zone of saturation to a depth similar to the depth of MW-20. If the field screening indicates that no impacted groundwater is present at a given boring location, a monitoring well will be installed near this location and sampled to confirm the absence of VOCs (well installation methods are described below). Alternatively, if the field screening indicates the presence of VOC-impacted groundwater, the reserved groundwater sample from the vertical interval with the highest field screening value will be sent to the laboratory for VOC analysis and a monitoring well will not be installed at this location.

Where monitoring wells are to be installed, they will be constructed of 1.5-inch diameter polyvinyl chloride (PVC), with 15-foot pre-pack well screens. The wells will be installed through direct-push tooling near the location of the soil boring. A foam bridge will be placed above each well screen to keep sealing materials out of the screened interval. The interval above each well screen will be filled with bentonite grout emplaced through tremie pipe, and a steel flush-mount well protector will be set in a concrete pad. The wells will be developed no sooner than 24 hours after completion. Following development, each well will be purged and sampled for VOCs according to Site groundwater monitoring procedures and following the protocols outlined in the QAPP.

Borings that are not used for well installation will be abandoned using bentonite grout emplaced through a tremie pipe. The grout will extend to within one-foot of the ground surface, and the upper foot at the ground surface will be backfilled with soil and compacted.

Field equipment, such as non-dedicated sampling or down-hole equipment will be decontaminated between use at each sampling location following the procedures outlined in the QAPP. Purge water and soils generated during the sampling event and well installation will be placed into Department of Transportation approved 55-gallon steel drums and transported to the on-site staging area for investigation

derived waste (IDW). Groundwater analytical results will be evaluated to characterize the purge water and soils for transportation and disposal by a licensed waste hauler retained by Meritor.

The new well(s), the soil boring location(s), and the utility markings will be surveyed by a licensed professional surveyor. Water levels measured in the wells will be incorporated into future Site Upper Zone potentiometric surface maps.



Section 3

Schedule and Reporting

Within 60 days of receipt of the sample results from the new wells, Meritor will submit a letter report detailing the findings. Soil boring logs and well construction diagrams will be included, along with well development and sampling forms and the analytical results. A potentiometric map of the Upper Zone will be generated using groundwater elevations from existing wells and the new wells. This map will be used to define the extent of VOC impact in groundwater north of the Site using the location(s) of the new well(s) to effectively bracket the MW-20 location, and thus provide better definition of VOC impact in the northern portion of the plume.

Meritor plans to install the new well(s) within 30 days following approval of this Work Plan, assuming that the needed access agreements are in place with the railroad, and will notify USEPA of the date that the work will begin.



References

Brown and Caldwell. 2006. Quality Assurance Project Plan.

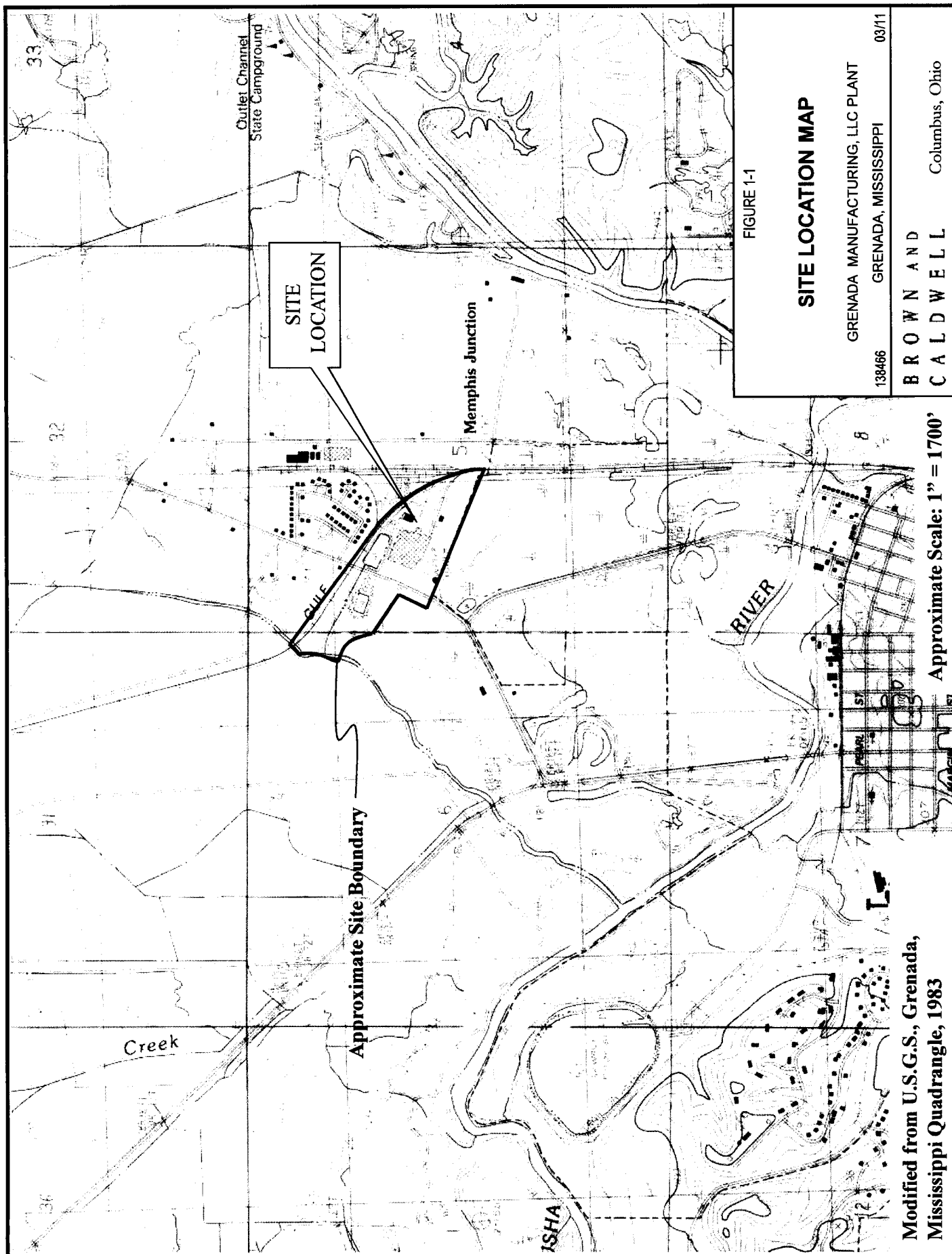
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Figures





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Sent: Thursday, March 26, 2015 3:11 PM
To: James Peeples
Cc: O'Connor, David A.; Laura Page
Subject: RE: Grenada Manufacturing

Great. Thank you.

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Brian,

The tables are in the DropBox now.



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Meritor, Inc.
2135 West Maple Road, B-146A
Troy, Michigan 48084
USA
www.meritor.com

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Thursday, March 19, 2015 1:47 PM
To: O'Connor, David A.
Cc: JPeebles@tandmassociates.com
Subject: Grenada Manufacturing

Hi Dave. Hope things are well with you.

I was wondering when you can send the CY2013 Annual Report and data? I've attached the format for the data submittal. I should have a letter out to you soon regarding the CY2012 report, but that shouldn't stand in the way of sending in the 2013 report.

Also, didn't you mention the other week that the next MW-20 AOC report should be in soon as well? Thanks for looking into these items.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

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Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, March 19, 2015 1:47 PM
To: David.OConnor@Meritor.com
Cc: JPeebles@tandmassociates.com
Subject: Grenada Manufacturing
Attachments: DataSubmittalFormat.xlsx

Hi Dave. Hope things are well with you.

I was wondering when you can send the CY2013 Annual Report and data? I've attached the format for the data submittal. I should have a letter out to you soon regarding the CY2012 report, but that shouldn't stand in the way of sending in the 2013 report.

Also, didn't you mention the other week that the next MW-20 AOC report should be in soon as well? Thanks for looking into these items.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

LOCATION_ID	ID	X Coordinate	Y Coordinate	Matrix Code	Sample Top BGS	Sample Bottom BGS	Top of Casing (for wells)	Total Depth	SampleDate	Parameter	Result
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Unit	Interpreted Qualifier	Dilution Value	Water Level Date	Water Level
------	--------------------------	-------------------	---------------------	----------------

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, February 6, 2015 10:36 AM
To: James Peeples
Subject: RE: Grenada

Hi James. I wanted to clarify what you mentioned below. So, you are unavailable after 9:00am all day Tuesday? I was shooting for Tuesday, but we can do Wednesday if needed. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: James Peeples [<mailto:JPeebles@tandmassociates.com>]
Sent: Thursday, February 05, 2015 2:38 PM
To: Bastek, Brian
Cc: Anderson, Meredith; O'Connor, David A.
Subject: RE: Grenada

Brian,

Of the times that Dave has indicated his availability (below), I am not available between 9:30 and 10:30 on Monday morning and after 9:00 AM on Tuesday. On Wednesday, I am available all day.

Thanks,



James Peeples, P.E.
Vice President
4675 Lakehurst Court, Columbus, OH 43016
Tel: + 1 614 339 3380 | Cell: + 1
Fax: + 1 614 389 7082
jpeeples@tandmassociates.com
tandmassociates.com

(b)(6)

From: O'Connor, David A. [<mailto:David.OConnor@Meritor.com>]
Sent: Thursday, February 05, 2015 2:12 PM
To: Bastek, Brian

Cc: James Peeples; Anderson, Meredith
Subject: RE: Grenada

Brian:

I am available Monday through Wednesday (8:00am to 2:00pm) the week of February 23rd. Thanks for arranging.

MERITOR

David A. O'Connor
*Manager, Corporate Environmental
Treasury Department*
248.435.2706 tel
248.435.8354 fax
cel (b)(6)
david.oconnor@meritor.com

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2135 West Maple Road, B-146A
Troy, Michigan 48084
USA
www.meritor.com

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Thursday, February 05, 2015 1:59 PM
To: O'Connor, David A.; Anderson, Meredith
Cc: Jim Peeples
Subject: RE: Grenada

Hi Dave.

Can we tentatively schedule a call for the last week in February? Let me know your availability for that week and I'll send out an invite. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [<mailto:David.OConnor@Meritor.com>]
Sent: Monday, January 05, 2015 2:29 PM
To: Anderson, Meredith
Cc: Bastek, Brian; Jim Peeples
Subject: RE: Grenada

Meredith:

I trust the holiday break was a restful and joyful one for you and the family.

Let Jim Peeples and me know a good time to have a conference call with you and Brian to discuss the Grenada site and project. Thanks.

MERITOR

David A. O'Connor
Manager, Corporate Environmental
Treasury Department
248.435.2706 tel
248.435.8354 fax
cel (b)(6)
david.oconnor@meritor.com

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Troy, Michigan 48084
USA
www.meritor.com

From: Anderson, Meredith [<mailto:Anderson.Meredith@epa.gov>]
Sent: Friday, November 21, 2014 2:25 PM
To: O'Connor, David A.
Cc: Bastek, Brian
Subject: Grenada

Hi Dave,
Thanks for your VMM the other day and sorry I missed your call. As you can tell, the Grenada site has been put on my back burner lately. I do have your 2012 report in-house and it's currently being reviewed, so we will get a response to you in the near future.

I also owe you a letter notifying you of a change in project managers for this site. I have been promoted to Section Chief and have passed this project to Brian Bastek. He has been in RCRA Corrective Action for 5+ years now and had the opportunity to visit the Grenada site several years ago, so he will be able to pick things up and run with them quickly. Sometime in December, Brian and I will schedule a conference call with you and Jim Peebles to introduce him to you and to touch base on where we are with our review and other project actions.

Thanks again for your message, and I look forward to talking to you next month. Have a happy Thanksgiving.

Meredith C. Anderson
Environmental Engineer
Chief, Corrective Action Section
RUST Branch/RCRA Division
anderson.meredith@epa.gov
404-562-8608 (office)
404-291-5623 (work cell)

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Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, February 5, 2015 1:59 PM
To: O'Connor, David A.; Anderson, Meredith
Cc: Jim Peeples
Subject: RE: Grenada

Hi Dave.

Can we tentatively schedule a call for the last week in February? Let me know your availability for that week and I'll send out an invite. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Monday, January 05, 2015 2:29 PM
To: Anderson, Meredith
Cc: Bastek, Brian; Jim Peeples
Subject: RE: Grenada

Meredith:

I trust the holiday break was a restful and joyful one for you and the family.

Let Jim Peeples and me know a good time to have a conference call with you and Brian to discuss the Grenada site and project. Thanks.

MERITOR

David A. O'Connor
Manager, Corporate Environmental
Treasury Department
248.435.2706 tel
248 435 8354 fax
cel (b)(6)
david.oconnor@meritor.com

Meritor, Inc.
2135 West Maple Road, B-146A
Troy, Michigan 48084
USA
www.meritor.com

From: Anderson, Meredith [mailto:Anderson.Meredith@epa.gov]
Sent: Friday, November 21, 2014 2:25 PM

To: O'Connor, David A.
Cc: Bastek, Brian
Subject: Grenada

Hi Dave,

Thanks for your VMM the other day and sorry I missed your call. As you can tell, the Grenada site has been put on my back burner lately. I do have your 2012 report in-house and it's currently being reviewed, so we will get a response to you in the near future.

I also owe you a letter notifying you of a change in project managers for this site. I have been promoted to Section Chief and have passed this project to Brian Bastek. He has been in RCRA Corrective Action for 5+ years now and had the opportunity to visit the Grenada site several years ago, so he will be able to pick things up and run with them quickly. Sometime in December, Brian and I will schedule a conference call with you and Jim Peeples to introduce him to you and to touch base on where we are with our review and other project actions.

Thanks again for your message, and I look forward to talking to you next month. Have a happy Thanksgiving.

Meredith C. Anderson
Environmental Engineer
Chief, Corrective Action Section
RUST Branch/RCRA Division
anderson.meredith@epa.gov
404-562-8608 (office)
404-291-5623 (work cell)

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Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, June 18, 2015 3:02 PM
To: O'Connor, David A.
Subject: Grenada Site Attorney Contact Info

Dave,

Please find below the contact info for our attorneys for the Grenada site:

Gregory D. Luetscher

Attorney/Advisor
U.S. EPA Region 4
61 Forsyth St., S.W.
Atlanta, GA 30303
(404) 562-9677

Colleen E. Michuda
Senior Attorney, Office of RCRA, OPA & UST Legal Support
U.S. Environmental Protection Agency, Region 4
Atlanta, Georgia 30303
404-562-9685
michuda.colleen@epa.gov

Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Friday, June 19, 2015 11:30 AM
To: James Peeples
Cc: David O'Connor (David.OConnor@Meritor.com)
Subject: RE: Grenada MW-20 Area 2015 Investigation

Thank you, Jim. Can you please send the dropbox link again? Also, remind me to which comments you are working on responses?

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: James Peeples [mailto:JPeeples@tandmassociates.com]
Sent: Thursday, June 18, 2015 3:57 PM
To: Bastek, Brian
Cc: David O'Connor (David.OConnor@Meritor.com)
Subject: Grenada MW-20 Area 2015 Investigation

Brian,

I have uploaded draft figures to the DropBox that we used in the past for MW-20 Area information. The draft figures are in a separate folder called "2015 Investigation". To some extent the figures are self-explanatory, but it is probably best if we have a call to go through these and I can provide some additional information that was used to make the interpretations. Note that the concentrations provided on the cross sections are for total CVOCs (TCE, cDCE and VC combined) and are in uM to allow appropriate accounting for each of the species.

Please let me know when you would be available for a call to go over these results and I will set up a call-in number. Feel free to call me directly as well if you have questions. If you have any trouble accessing the DropBox directory, I can resend a link.

We are also close to being done with responses to the two sets of comments you forwarded to us prior to our meeting at the site in May. We should have these ready to send to you in the near future.

Thanks,



JAMES PEEPLES, PE
VICE PRESIDENT, SENIOR TECHNICAL ENVIRONMENTAL ENGINEER

4675 Lakehurst Court, Suite 250, Columbus, OH 43016
T+ 614.339.3380 D + 614.408.9237 C +
JPEEPLES@TANDMASSOCIATES.COM | TANDMASSOCIATES.COM

(b)(6)



T&M was recently named one of the Top Design Firms in the country by Engineering News-Record. See the details

Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, June 18, 2015 3:10 PM
To: Hodoh, Ofia; Bentkowski, Ben
Subject: Grenada Manufacturing, LLC MW-20 AOC Work Plan Scope of Work

Ben/Ofia,

It looks like we are ready (potentially) to have this scoping call for the VI work plan based on the report you both reviewed. When would be a good time next week? Please let me know your availability. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, June 25, 2015 11:31 AM
To: O'Connor, David A.
Subject: FW: Final Vapor Intrusion Technical Guides
Attachments: OSWER Vapor Intrusion Guide - Final.pdf; PVI Guide - Final.pdf; VI Guides Transmittal Memo_Signed 6-11-15.pdf

FYI and use crafting the VI work plan.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Stanislaus, Mathy
Sent: Thursday, June 11, 2015 3:48 PM
To: OSWER SF Reg DDs; OUST Regional Program Managers; Regional RCRA Directors & Deputies; OSWER OD Deputies
Cc: Breen, Barry; Natarajan, Nitin; Mackey, Cyndy; Kling, David; Michaud, John
Subject: Final Vapor Intrusion Technical Guides

MEMORANDUM

SUBJECT: Final Vapor Intrusion Technical Guides

FROM: Mathy Stanislaus
Assistant Administrator

TO: Regional Superfund Division Directors
Regional UST Program Managers
Regional RCRA Division Directors
OSWER Office Directors

Purpose

This memorandum announces the publication of two guides pertaining to the vapor intrusion pathway:

- *OSWER Technical Guide For Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air* [OSWER Publication 9200.2-154]; available on-line at <http://www.epa.gov/oswer/vaporintrusion/>; and
- *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites* [EPA 510-R-15-001]; available on-line at www.epa.gov/oust/cat/pvi

These guides do not impose any requirements or obligations on the EPA, states or tribal governments, or the regulated community. Rather, the sources of authority and requirements for addressing subsurface vapor intrusion are the relevant statutes and regulations.

Background

Certain chemicals released into the subsurface environment may form hazardous vapors that migrate towards and enter buildings or other enclosed structures as a component of a gas. “Vapor intrusion” is the general term given to migration of hazardous vapors from any subsurface contaminant source, such as contaminated soil or groundwater or contaminated conduit(s), into an overlying building or structure. The intrusion of contaminant vapors into indoor spaces raises concern due to potential threats to safety (e.g., explosive concentrations of petroleum hydrocarbon vapors, etc.) and possible adverse health effects from inhalation exposure to vapor concentrations that may be toxic.

To help assess the subsurface vapor intrusion pathway, the Office of Solid Waste and Emergency Response (OSWER) released in November 2002, for public review and comment, a draft guide based on the understanding of vapor intrusion at that time. Since the EPA released the 2002 draft, the Agency’s knowledge of and experience with vapor intrusion has increased considerably, leading to an improved understanding of and enhanced approaches for evaluating and mitigating vapor intrusion.

Objective

These two guides present the EPA’s current recommendations for identification and consideration of key factors when assessing vapor intrusion, making risk management decisions, and implementing mitigation pertaining to this potential human exposure pathway. As such, they supersede and replace OSWER’s 2002 draft vapor intrusion guidance.

One of the guides’ main purposes is to promote national consistency in vapor intrusion evaluation activities. They do so, in part, by incorporating the EPA’s traditional risk assessment and risk management paradigms. At the same time, they provide flexible and defensible science-based assessment approaches that accommodate different site circumstances as well as differences among pertinent EPA programs. In this way, the guides recognize and reflect that application of the EPA’s statutory authorities to a particular situation generally entails site- and fact-specific analysis.

Implementation

The *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air* is intended for use at any site being evaluated by the EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended,^[1] or the corrective action provisions of the Resource Conservation and Recovery Act (RCRA), as amended. It is also intended for use by the EPA’s brownfield grantees, or state agencies acting pursuant to CERCLA or an authorized RCRA corrective action program where vapor intrusion may be of potential concern.

The *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites* is intended for use at any site subject to petroleum contamination from underground storage tanks where vapor intrusion may be of potential concern.

Users of these guides should also be aware of applicable state requirements and guidance prior to conducting investigations and response actions for vapor intrusion. For the RCRA corrective action program most states and territories are authorized to carry out facility-wide activities. For the underground storage tank program states and territories are the primary implementers.

^[1] Amendments to CERCLA include the Small Business Liability Relief and Brownfields Revitalization Act.

Mathy Stanislaus
Assistant Administrator
Office of Solid Waste & Emergency Response

^[1] Amendments to CERCLA include the Small Business Liability Relief and Brownfields Revitalization Act.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 11 2015

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Final Vapor Intrusion Technical Guides

FROM: Mathy Stanislaus

Assistant Administrator

A handwritten signature in black ink, appearing to read "Mathy Stanislaus", is written over the printed name and title.

TO: Regional Superfund Division Directors
Regional UST Program Managers
Regional RCRA Division Directors
OSWER Office Directors

Purpose

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- *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites* [EPA 510-R-15-001]; available on-line at www.epa.gov/oust/cat/pvi

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To help assess the subsurface vapor intrusion pathway, the Office of Solid Waste and Emergency Response (OSWER) released in November 2002, for public review and comment, a draft guide based on the understanding of vapor intrusion at that time. Since the EPA released the 2002 draft, the Agency's knowledge of and experience with vapor intrusion has increased considerably, leading to an improved understanding of and enhanced approaches for evaluating and mitigating vapor intrusion.

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These two guides present the EPA's current recommendations for identification and consideration of key factors when assessing vapor intrusion, making risk management decisions, and implementing mitigation pertaining to this potential human exposure pathway. As such, they supersede and replace OSWER's 2002 draft vapor intrusion guidance.

One of the guides' main purposes is to promote national consistency in vapor intrusion evaluation activities. They do so, in part, by incorporating the EPA's traditional risk assessment and risk management paradigms. At the same time, they provide flexible and defensible science-based assessment approaches that accommodate different site circumstances as well as differences among pertinent EPA programs. In this way, the guides recognize and reflect that application of the EPA's statutory authorities to a particular situation generally entails site- and fact-specific analysis.

Implementation

The *OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway From Subsurface Vapor Sources to Indoor Air* is intended for use at any site being evaluated by the EPA pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended,¹ or the corrective action provisions of the Resource Conservation and Recovery Act (RCRA), as amended. It is also intended for use by the EPA's brownfield grantees, or state agencies acting pursuant to CERCLA or an authorized RCRA corrective action program where vapor intrusion may be of potential concern.

The *Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites* is intended for use at any site subject to petroleum contamination from underground storage tanks where vapor intrusion may be of potential concern.

Users of these guides should also be aware of applicable state requirements and guidance prior to conducting investigations and response actions for vapor intrusion. For the RCRA corrective action program most states and territories are authorized to carry out facility-wide activities. For the underground storage tank program states and territories are the primary implementers.

cc: Barry Breen, OSWER
Nitin Natarajan, OSWER
Cyndy Mackey, OECA/OSRE
Dave Kling, OECA/FFEO
John Michaud, OGC/SWERLO

¹ Amendments to CERCLA include the Small Business Liability Relief and Brownfields Revitalization Act.

Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, June 25, 2015 9:46 AM
To: O'Connor, David A.
Subject: RE: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan

Dave,

I recommend having them on the call since today's meeting is only technical in nature and won't involve legal discussions. Call me this morning if you want to discuss.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Thursday, June 25, 2015 9:17 AM
To: John Ellis; Rob Uppencamp
Cc: Bastek, Brian; Maillet, Brian
Subject: RE: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan
Importance: High

John and Rob:

I forwarded you the meeting notice a short time ago. Please note that at this time we will **not** need ARCADIS on today's call. Sorry for any confusion. Today's call will include legal discussions that will not require ARCADIS to be present on the call.

I will let you both know the outcome of today's discussions as it relates to VI evaluations.



MERITOR

David A. O'Connor
Corporate Environmental Manager
Treasury Department
248.435.2706 tel
248.435.8354 fax
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david.oconnor@meritor.com

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Troy, Michigan 48084
USA
www.meritor.com

-----Original Appointment-----

From: O'Connor, David A. **On Behalf Of** Bastek, Brian

Sent: Thursday, June 25, 2015 8:47 AM

To: John Ellis; Rob Uppencamp

Subject: FW: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan

When: Thursday, June 25, 2015 12:30 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: R4-10T7-Branch-Conf-Rm/Sam-Nunn-Federal-Building-ATL

-----Original Appointment-----

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]

Sent: Tuesday, June 23, 2015 5:07 PM

To: Bastek, Brian; Anderson, Meredith; Bentkowski, Ben; Holtzclaw, Brian; Hodoh, Ofia; O'Connor, David A.; James Peebles

Subject: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan

When: Thursday, June 25, 2015 12:30 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: R4-10T7-Branch-Conf-Rm/Sam-Nunn-Federal-Building-ATL

The purpose of this call is to discuss the scope of the VI investigation work plan and to answer any questions the facility has regarding EPA's approach and regional practices.

Call in number: (800) 571-1234

Code:

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Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, June 24, 2015 10:55 AM
To: O'Connor, David A.
Subject: RE: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan

Right; we'll keep the call the same. It will be a technical discussion about scoping out the work at the residences. The attorneys will sit in, but I don't want the conversation to be dominated by the legal stuff. That can be done on a separate call.

Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Wednesday, June 24, 2015 9:47 AM
To: Bastek, Brian
Subject: RE: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan

Brian:

Linda Furlough, Meritor Counselor, and Jeff Karp, Meritor's outside Counsel, talked with Colleen Michuda yesterday I believe. Please talk to Colleen because it is my understanding that both parties want legal representation on the technical call (for tomorrow).



David A. O'Connor
Corporate Environmental Manager
Treasury Department
248.435.2706 tel
248.435.8354 fax
cel (b)(6)
david.oconnor@meritor.com

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2135 West Maple Road, B-146A
Troy, Michigan 48084
USA
www.meritor.com

-----Original Appointment-----

From: Bastek, Brian [mailto:Bastek.Brian@epa.gov]

Sent: Tuesday, June 23, 2015 5:07 PM

To: Bastek, Brian; Anderson, Meredith; Benthowski, Ben; Holtzclaw, Brian; Hodoh, Ofia; O'Connor, David A.; James Peebles

Subject: Grenada Manufacturing MW-20 AOC VI Investigation Work Plan

When: Thursday, June 25, 2015 12:30 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: R4-10T7-Branch-Conf-Rm/Sam-Nunn-Federal-Building-ATL

The purpose of this call is to discuss the scope of the VI investigation work plan and to answer any questions the facility has regarding EPA's approach and regional practices.

Call in number:

Code: (b)(5)

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Pressley, Miriam

From: Bastek, Brian
Sent: Monday, June 22, 2015 11:50 AM
To: David O'Connor (David.OConnor@Meritor.com)
Subject: Technical Call this week

Dave,

Any word on everyone's availability for a technical scoping call this week as we discussed last Thursday? I'm hearing back from a few of the folks on this end.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, June 16, 2015 4:26 PM
To: O'Connor, David A.
Subject: RE: Mondays' Call

Hi Dave. Meredith and I have met with our attorneys regarding your request for a unilateral order. Can we set up a call with you sometime this week to discuss?

Thanks.

Brian Bastek
Environmental Engineer
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RCRA Corrective Action and Permitting Section
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404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Friday, June 05, 2015 12:43 PM
To: Bastek, Brian
Cc: Anderson, Meredith; Jim Peeples
Subject: Mondays' Call

Brian:

Hopefully you received my voice message on Thursday about limiting the participants to you, Meredith, Jim Peeples and me. Jim and I had a call with Meritor's outside counsel and we would like to discuss the MW-20 work in advance of discussing technical work with EPA's tech support personnel.

Hopefully you and Meredith can accommodate Jim and me for this discussion on Monday. I suggest we keep the same date, time and call-in number for the four of us to discuss a recommendation from my outside counsel. Please let me know if you agree to this change. Thanks.

MERITOR

David A. O'Connor
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Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, June 16, 2015 2:46 PM
To: James Peeples
Cc: David O'Connor (David.OConnor@Meritor.com)
Subject: RE: Grenada Manufacturing - Hydro review of modeling parameters

Hi Jim.

I hope this finds you well. I was wondering if any of the new data could be shared with me over email or through the dropbox? Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
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bastek.brian@epa.gov

From: James Peeples [mailto:JPeebles@tandmassociates.com]
Sent: Friday, May 15, 2015 7:22 AM
To: Bastek, Brian; Anderson, Meredith
Cc: David O'Connor (David.OConnor@Meritor.com)
Subject: FW: Grenada Manufacturing - Hydro review of modeling parameters

Brian,

Per our call yesterday, I am providing an update on the investigation at the Grenada Site. The attached Figure 1 is the figure used previously to identify the locations of borings and temporary wells to be installed in this investigation. I have circled the wells (in yellow) that have not yet been completed, but I anticipate that these wells will be in place by the time you arrive on Tuesday. All wells in the Railroad Area on the east side of the figure have been installed and sampled. We are awaiting laboratory results for these samples. We are in the process of sampling the wells along SR 332 and are anticipating that all wells will be sampled by the end of next week.

The soil gas testing in the MW-20 Area will be set up today, with some testing completed by the time you arrive on Tuesday.

Please let me know if you have any questions regarding the work to date. We look forward to showing you the progress of the investigation to date and discussing any preliminary results we will have at that time.

Sincerely,



JAMES PEEPLES, PE
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JPEEPLES@TANDMASSOCIATES.COM | TANDMASSOCIATES.COM

From: James Peeples
Sent: Wednesday, April 15, 2015 4:03 PM
To: Bastek, Brian
Cc: Anderson, Meredith; David O'Connor (David.OConnor@Meritor.com)
Subject: RE: Grenada Manufacturing - Hydro review of modeling parameters

Brian,

The proposed scope of work for our next mobilization to Grenada is provided below. We plan to begin this work during the week of April 27th. The work will take a few weeks to complete; hopefully you will be able to make it to the site sometime during this mobilization to discuss this work and upcoming work.

The current scope of work is divided into the following two tasks:

1. Further delineate the MW-20 Area groundwater plume and source area; and
2. Further evaluate potential for soil gas migration from EQ Basin into the MW-20 Area.

Brief descriptions of these tasks are provided below.

Task 1 – Delineate MW-20 Area Groundwater Plume and Source Area

Two primary lines of temporary wells will be installed to aid in the delineation of the MW-20 Area groundwater CVOC plume. One line of borings/wells will be placed along the north-south portion of the rail yard on the east side of the "triangle property" between the railroad branches (see Figure 1). Access to this location has been provided by the railroad, pending a site walkthrough to discuss the access points and safe distances from the tracks. The deep boring at each location will be logged to identify the top of the Upper Aquifer (bottom of the Surficial Clay), the location and thickness of the Intermediate Clay (expected to be encountered at all borings in this area), and the elevation of the Shaley Clay Aquitard. Assuming the presence of the Intermediate Clay, a deep, temporary well will be set in the logged boring that will be fully screened in the Deep Zone of the Upper Aquifer and will be grouted through the Intermediate Clay to seal the Shallow Zone from the Deep Zone. A second, temporary well will then be installed adjacent to the deep boring that will be fully screened within the Shallow Zone. The approximate locations for the temporary borings/wells are shown on Figure 1 (attached).

Following installation of the line of wells (placed at a spacing of about 100 feet on center) east of the MW-20 Area, vertical intervals within the wells will be sampled using packers to obtain groundwater samples at three (3) vertical intervals in each of the shallow and deep well (a total of six (6) vertical sampling intervals for each boring location). The sampling results will be used to define the vertical and horizontal configuration of the plume as it crosses into the "triangle" property west of the main north-south rail line, assuming that the plume crosses this area.

A second line of temporary wells will be installed along the west side of State Route 332 (see Figure 1). To date, an Intermediate Clay layer has not been identified in this area of the site. Sufficient boring locations will be logged to determine if an Intermediate Clay zone is present along this line and to identify other key stratigraphic features of the aquifer. If an Intermediate Clay zone is not encountered in this area, a single, temporary well will be installed at each boring location fully screened through the Upper Aquifer. If an Intermediate Clay layer is identified at a given location, shallow and deep temporary wells will be installed as described above for the rail yard area. Following installation of the temporary wells along State Route 332, each well will be sampled at six (6) vertical intervals as described above.

Following installation of the wells, horizontal coordinates and vertical elevations will be surveyed. The wells will be placed on site maps and water levels from each well will be obtained to provide better resolution for a sitewide potentiometric surface. Stratigraphy obtained from the borings will be used to augment and update existing cross sections that pass through the areas of work.

CVOC concentrations from the vertical intervals within the two (2) primary lines of wells will be combined with historical information from the groundwater monitoring program to draw groundwater plume maps that define source areas contributing to the overall plume at the site. New site-wide potentiometric surfaces will be developed and new plume maps will be drawn. Existing cross-sections located in the area of the new borings will be updated with the stratigraphic information obtained from the borings.

Task 2 – Evaluate Vadose-Zone Sands and Their Interconnection within the MW-20 Area

Additional work is needed in the MW-20 Area to identify the source of CVOCs observed in soil gas in the vicinity of VP-5 and to evaluate options to mitigate soil gas issues in the MW-20 Area if they are determined to present a potential vapor intrusion (VI) risk. Work to date has indicated soil gas from the former Equalization Basin (EQ Basin) is a potential source for CVOC detections in the MW-20 Area. Higher concentrations of CVOCs were observed at VP-3, VP-5, VP-106 and VP-107. Investigation results do not indicate that the observed soil gas concentrations exceed risk-based levels for vapor intrusion (VI).

The testing described in this proposal would be used to determine the degree of interconnection within the vadose-zone sandy soils in the MW-20 Area and in probes that have been installed in the EQ Basin Area. Soil samples will also be collected in the MW-20 Area and analyzed in the laboratory to obtain site-specific data input for the Johnson-Ettinger (JE) model. Soil particle size analysis will be completed to clearly define the proper soil classification to be used in the JE model and soil moisture analyses will be completed to better define the water content of the soil used in the JE model.

The proposed work will involve the installation of an additional soil gas probe/well in the MW-20 Area. Logged Geoprobe borings (and additional borings if needed) within the area of higher soil gas CVOC concentrations will be used to identify the best location for placement of a new soil gas probe/well. The intention is to place the probe/well where a thicker zone of unsaturated sand is present and where the sand is coarser-grained. The probe/well will be installed using a Geoprobe and small diameter augers. The augers will allow placement of a four-inch probe/well at the selected location.

A vacuum blower will be connected to the new soil gas probe/well and potential induced vacuum at soil gas probes throughout the MW-20 Area and the EQ Basin will be measured. The objective of this work is to determine if the vadose-zone sandy soils are interconnected through the MW-20 Area and if these vadose-zone soils are connected with soils in the EQ Basin area. Soil properties that will allow a more site specific JE analysis will also be obtained in this investigation.

Please let me know if you have any questions regarding this scope of work.

Sincerely,



JAMES PEEPLES, PE
VICE PRESIDENT, SENIOR TECHNICAL ENVIRONMENTAL ENGINEER

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From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]

Sent: Tuesday, April 14, 2015 9:43 AM

To: O'Connor, David A.; James Peeples

Cc: Anderson, Meredith

Subject: FW: Grenada Manufacturing - Hydro review of modeling parameters

Hi Jim. Please see some questions below from our hydro geologist who is looking at the J and E modeling. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Bentkowski, Ben
Sent: Monday, April 13, 2015 2:58 PM
To: Bastek, Brian
Subject: RE: Grenada Manufacturing - Hydro review of modeling parameters

Brian,
I've done my first pass through and had a couple of questions. Do you have any boring logs for the soil gas samples collected or boring logs for the nearby monitoring wells? They want to use the J&E model and I think they should be a bit more specific about the subsurface geology/lithology since the model allows for that. Additionally, do they have any sampling data sheets from sampling the monitoring wells? They say the soil temperature is 50 degrees. That seems a bit low and VI evaluations are sensitive to the temperature of the soil or groundwater.

Basically, I'm looking for some documentation of these important input parameters to the J&E model. The TCE values are pretty high in some places and I need to make sure they are applying the model correctly so they are assessing the risk correctly.

Thanks,
Ben

Ben Bentkowski, P.G.
USEPA R4 Superfund Scientific Support Section
61 Forsyth St
ATL, GA 30303
(404) 562-8507 o
(770) 296-2529 c

Pressley, Miriam

From: Bastek, Brian
Sent: Monday, June 8, 2015 9:32 AM
To: O'Connor, David A.
Subject: RE: MW-20 AOC Work Plan for VI

Dave,

Do you have a call in number that we can use so that the conversation remains with just the four of us? Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
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-----Original Appointment-----

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Monday, June 08, 2015 9:24 AM
To: Bastek, Brian
Subject: Accepted: MW-20 AOC Work Plan for VI
When: Monday, June 08, 2015 10:00 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Call in

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Pressley, Miriam

From: Bastek, Brian
Sent: Sunday, June 7, 2015 8:17 PM
To: O'Connor, David A.
Cc: Anderson, Meredith; Jim Peeples
Subject: RE: Mondays' Call

Hi Dave.

I did receive your email and voicemail from last week that mentioned narrowing the field of Monday's call to just the four of us. I understand if you think there is good reason to do so and I will cancel the call for everyone else. We can keep the same time and call in number since that may simplify things a little. Talk to you both tomorrow morning.

Brian Bastek
Environmental Engineer
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RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Friday, June 05, 2015 12:43 PM
To: Bastek, Brian
Cc: Anderson, Meredith; Jim Peeples
Subject: Mondays' Call

Brian:

Hopefully you received my voice message on Thursday about limiting the participants to you, Meredith, Jim Peeples and me. Jim and I had a call with Meritor's outside counsel and we would like to discuss the MW-20 work in advance of discussing technical work with EPA's tech support personnel.

Hopefully you and Meredith can accommodate Jim and me for this discussion on Monday. I suggest we keep the same date, time and call-in number for the four of us to discuss a recommendation from my outside counsel. Please let me know if you agree to this change. Thanks.

MERITOR

David A. O'Connor
Corporate Environmental Manager
Treasury Department
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JPEEPLES@TANDMASSOCIATES.COM | TANDMASSOCIATES.COM

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Wednesday, May 27, 2015 10:08 AM
To: James Peeples
Cc: O'Connor, David A.
Subject: RE: Grenada Call Tomorrow

Hi Jim. I'm working at home today, so I just checked my voice messages. I'm not sure of everyone's availability for next week, but I'll check into it. I am only available on Monday of next week since I will be on vacation Tuesday through Friday. So, if Monday doesn't work for you guys then we will have to postpone it until the following week. Can all three of you do it on Monday? I'll check with folks on my end.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: James Peeples [<mailto:JPeebles@tandmassociates.com>]
Sent: Wednesday, May 27, 2015 9:58 AM
To: Bastek, Brian
Cc: O'Connor, David A.
Subject: RE: Grenada Call Tomorrow

Brian,

Did you get my voice message regarding the call time for tomorrow? I am hoping we can reschedule the time for the call per my voice mail.

We are plotting the data we have in hand and working toward making the calls in terms of where the plume is present in the neighborhood and where it may be heading, but we do not have all the data back yet to be able to make those calls. If we delay the call until early next week, we should be in a better position regarding the data we will have in hand and we will be able to provide some figures ahead of the call that will be useful.

Thanks,

Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, May 27, 2015 12:31 PM
To: James Peeples
Cc: O'Connor, David A.
Subject: RE: Grenada Call Tomorrow

Jim,

I'm willing to wait on the data, but the overall investigation timeframe can't be delayed too much. Let me check on everyone's ability for June 8th and get back to you; June 9th could also work. EPA would still want to see a work plan that following week though (week of June 15th) in order to remain on schedule.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: James Peeples [mailto:JPeebles@tandmassociates.com]
Sent: Wednesday, May 27, 2015 10:30 AM
To: Bastek, Brian
Cc: O'Connor, David A.
Subject: RE: Grenada Call Tomorrow

Brian,

I have a conflict for next Monday, but if Monday is the only day available next week, I will try to make it work. On the other hand, if we do not have the call next week, there would be time to get the necessary figures completed and circulated a few days ahead of the call so everyone would have a chance to digest the new information and be ready to discuss it on the call. I recognize the reason for the time crunch and agree that we want to have this call soon, but the last of our data will arrive on Monday of next week and it will take some time to get it on maps and come to a good understanding of what we have.

Let me know what you think.

Thanks,



JAMES PEEPLES, PE
VICE PRESIDENT, SENIOR TECHNICAL ENVIRONMENTAL ENGINEER

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JPEEPLES@TANDMASSOCIATES.COM | TANDMASSOCIATES.COM

From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]

Sent: Wednesday, May 27, 2015 9:50 AM

To: O'Connor, David A.; James Peeples

Subject: Grenada Call Tomorrow

Gents,

If you wanted to discuss anything related to the newest data set from the last few weeks, then please provide some of that preliminary data on a figure that we can share with everyone on the call. This may factor in to which houses we are targeting for the initial round of air monitoring.

Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, May 27, 2015 9:50 AM
To: O'Connor, David A.; Jim Peebles
Subject: Grenada Call Tomorrow

Gents,

If you wanted to discuss anything related to the newest data set from the last few weeks, then please provide some of that preliminary data on a figure that we can share with everyone on the call. This may factor in to which houses we are targeting for the initial round of air monitoring.

Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, May 26, 2015 8:48 AM
To: O'Connor, David A.
Subject: FOIA Request Info

Sent this last week, but maybe should have changed the subject. Hope your holiday weekend was good.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

-----Original Message-----

From: Bastek, Brian
Sent: Friday, May 22, 2015 2:27 PM
To: 'O'Connor, David A.'
Subject: RE: Grenada Manufacturing, LLC MW-20 AOC Investigation Discussion and Path Forward

Dave,

Here is who was doing the follow up to the original FOIA request. I'm not sure if I was ever forwarded the original request.

Libby Bradberry
Paralegal to Craig R. Sessums, Esq.
Funderburg, Sessums & Peterson, PLLC
901 North State Street (39202)
P. O. Box 13960
Jackson, MS 39236-3960
Telephone: 601-355-5200
Facsimile: 601-355-5400
Email: libby@jfsplawfirm.com

Brian Bastek
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bastek.brian@epa.gov

-----Original Appointment-----

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]

Sent: Friday, May 22, 2015 2:10 PM

To: Bastek, Brian

Subject: Accepted: Grenada Manufacturing, LLC MW-20 AOC Investigation Discussion and Path Forward

When: Thursday, May 28, 2015 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Call in number to follow

Brian:

Will you send us the name on the FOIA request?

Enjoy your holiday weekend.

Dave O'Connor

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Pressley, Miriam

From: Bastek, Brian
Sent: Friday, May 22, 2015 2:27 PM
To: O'Connor, David A.
Subject: RE: Grenada Manufacturing, LLC MW-20 AOC Investigation Discussion and Path Forward

Dave,

Here is who was doing the follow up to the original FOIA request. I'm not sure if I was ever forwarded the original request.

Libby Bradberry
Paralegal to Craig R. Sessums, Esq.
Funderburg, Sessums & Peterson, PLLC
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-----Original Appointment-----

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Friday, May 22, 2015 2:10 PM
To: Bastek, Brian
Subject: Accepted: Grenada Manufacturing, LLC MW-20 AOC Investigation Discussion and Path Forward
When: Thursday, May 28, 2015 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Call in number to follow

Brian:

Will you send us the name on the FOIA request?

Enjoy your holiday weekend.

Dave O'Connor

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Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, May 20, 2015 5:49 PM
To: Hodoh, Ofia;Bentkowski, Ben
Subject: Grenada Manufacturing, LLC MW-20 AOC Report

Hi guys. Can you both be available next week on Thursday possibly to participate in a conference call to discuss your comments regarding the MW-20 AOC investigation report? Please let me know what times work best for you. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
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Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, May 14, 2015 3:52 PM
To: O'Connor, David A.; Jim Peeples
Cc: Anderson, Meredith
Subject: Grenada Manufacturing - Regarding potential residential vapor intrusion
Attachments: 2015 Grenada Mfg VI cmts hga edits_final.doc; VIRA_HH_FINAL.docx

Dave/Jim,

Thanks again for taking a few minutes today to discuss EPA's comments on the MW-20 AOC report from January 2014. Attached are the referenced comments for your review. As we stated in the call, once you have reviewed the comments, we can schedule a technical call to answer any questions you may have. In the meantime, EPA requests that Meritor submit an air monitoring work plan to determine if TCE vapors from the groundwater and/or soil are migrating into the residences north of the facility. This work plan should be submitted no later than 15 days following the date of the technical call. All references to support this approach and provide direction in the investigation are contained in the attached memoranda. A formal letter will follow.

Please let me know if you have any questions.

Thank you.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 4

61 Forsyth Street, S.W.
Atlanta, Georgia 30303

MEMORANDUM

April 5, 2015

SUBJECT: Review of Vapor Intrusion Risk Assessment
MW-20 AOC Report
Grenada Manufacturing Facility (Site)
Grenada, Mississippi

FROM: Ofia Hodoh
Scientific Support Section
Resource and Scientific Integrity Branch

TO: Brian Bastek, Corrective Action Specialist
Resource Conservation and Restoration Division

THROUGH: Glenn Adams, Chief
Scientific Support Section
Superfund Support Branch

Per your request, I have reviewed the Vapor Intrusion Investigation Risk Assessment, MW-20 AOC Report for the **Grenada Manufacturing Facility (Site)**, located in Grenada, MS. My review has focused on the human health risk aspects of the document as it pertains to vapor intrusion.

Comment to Corrective Action Specialist:

The author briefly discussed the results of the VI risk assessment based on the Johnson-Ettinger (J&E) modeled indoor air for vapor intrusion. Please consult with a Scientific Support Section (SSS) Hydrogeologist to confirm the accuracy of the J&E modeling parameters.

SPECIFIC COMMENTS:

1. **Section 1.1, 3rd paragraph, p. 2.** The author indicated that USEPA's J&E vapor intrusion model is the standard method for evaluating VI risks, citing a 2004 USEPA document that does not exist. Please be advised that USEPA has modified its approach to vapor intrusion and does not recommend modeling as the only line of evidence to screen out a site (USEPA, 2013a; USEPA, 2014e). In general, therefore, it is recommended that collection and evaluation of multiple lines of evidence is needed to support decision-making regarding the VI pathway (USEPA, 2012c).
2. **Section 1.1, 3rd paragraph, p. 2.** The air Regional Screening Levels (RSLs) and Vapor Intrusion Screening Levels (VISLs) for cis-1,2-DCE have been withdrawn from the screening tables therefore, IRIS does not support inhalation RfCs for this chemical (EPA, 2014g).
3. **Section 1.2, 2nd paragraph, p. 3.** This section states that the J&E model was used to determine total VI risks at each probe. This approach is outdated and problematic.
 - a) USEPA recommends that soil gas samples are compared to the soil gas VISLs (USEPA, 2014f).
 - b) USEPA's VISL calculator is recommended for use in evaluating whether the vapor intrusion pathway has the potential to pose a health concern.
 - c) The J&E model does not account for COPCs that act via a mutagenic mode of action (MMOA) thus underestimating risk posed by the vapor intrusion pathway. Consistent with the Superfund guidance on MMOA, methylene chloride and trichloroethylene (TCE) are categorized as chemicals with a MMOA and their cancer risks shall be estimated using age-dependent adjustment factors (ADAFs) (USEPA, 2005a,b).
 - d) USEPA has recently updated its Standard Default Exposure Factors (USEPA, 2014c) to reduce variability and uncertainty in the exposure assumptions for human health risk assessments. The averaging time and exposure duration used in the J&E model calculation should be revised to 26 years.
4. **Section 1.3, p.3.** It is indicated that the cumulative cancer risk for the nine probes are below 1E-5, and only one HI slightly exceeded 1. Based on the VISL calculator and modified exposure parameters, SSS noted that four of the nine locations exceeded the 1E-6 risk level (VP-2, VP-3, VP-5 and VP-6); and two locations exceeded the 1E-4 risk level (VP-3 and VP-5). Two locations greatly exceeded an HQ

of 1, due mainly to TCE (VP-3 at HQ of 34, and VP-5 at HQ of 160). The VP-2 location slightly exceeded an HQ of 1.

Recommendation: Since TCE is a site-related constituent, a carcinogen, a developmental toxicant and the highest detected probe (VP-5) is less than 100 ft from the nearest house, it does appear that imminent threat may be present. Early action is warranted to determine if vapor intrusion is occurring at the nearby residence.

- ✓ SSS recommends a multiple lines of evidence approach in evaluating and making decisions about risks from vapor intrusion. The recommendations for future analysis at the VP-5 residence should include:
 1. Contact the resident to determine if women of reproductive age (or known pregnancy status) live at the residence located near probe VP-5.
 2. Concurrently collecting indoor air samples with subslab soil gas or crawlspace air and outdoor (ambient) air. Comparing these results to each other and to results for subsurface vapor sources can foster insights and support findings about the relative contribution of vapor intrusion and 'background' sources to indoor air concentrations.
 3. Collect a time-integrated sample in the area directly above the foundation floor (crawl space) and one from the first floor living or occupied area. In general, samples should be collected at the breathing zone level for the most sensitive receptor. The crawl-space subfloor soil gas data (preferably from more than one sampling event to account for seasonal variability) is vital to assess concentrations potentially available for entry with any intruding soil gas.
 4. Prior to sampling indoor air in residential buildings, a home survey form should be completed to identify products used or stored within the residence that can act as potential indoor air sources. Examples of building surveys can be found in the EPA's 2002 guidance (Appendix I, USEPA 2002) and ITRC's 2007 guidance (Appendix G, ITRC 2007).
 5. Indoor air sampling data (preferably from more than one sampling event to account for seasonal variability) to assess the presence of subsurface contaminants in indoor air and assess potential exposure levels to building occupants.
 6. Collect outdoor air samples from a representative upwind location, away from wind obstructions (e.g., trees or buildings), and at a breathing-zone height (3 to 5 feet). A representative sample is one that is not biased toward obvious sources of

volatile chemicals (e.g., automobiles, lawn mowers, chemical storage tanks, gasoline stations, industrial facilities, etc.).

If I can be of any further assistance or if you have any questions, please call me at 404 562 9176.

References:

Interstate Technology and Regulatory Council (ITRC). 2007. Vapor Intrusion Pathway: A Practical Guideline. VI-1. Washington, D.C.: Interstate Technology & Regulatory Council, Vapor Intrusion Team. www.itrcweb.org/Documents/VI-1.pdf

U.S. EPA, 2002c. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance). Office of Solid Waste and Emergency Response, FR Notice November 29, 2002.

U.S. EPA, 2005a. Guidelines for Carcinogenic Risk Assessment. EPA/630/P-03/001F. March.

U.S. EPA, 2005b. Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens. Risk Assessment Forum. EPA/630/R-03/003F March 2005. [http://epa-prgs.ornl.gov/chemicals/help/documents/CHILDRENS_SUPPLEMENT_FINAL \[1\].pdf](http://epa-prgs.ornl.gov/chemicals/help/documents/CHILDRENS_SUPPLEMENT_FINAL_[1].pdf)

U.S. EPA, 2012c. Superfund Vapor Intrusion FAQs. February 2012. [http://www.epa.gov/superfund/sites/npl/Vapor Intrusion FAQs Feb2012.pdf](http://www.epa.gov/superfund/sites/npl/Vapor_Intrusion_FAQs_Feb2012.pdf)

U.S. EPA, 2013a. OSWER Final Guidance For Assessing and Mitigating The Vapor Intrusion Pathway From Subsurface Sources To Indoor Air (External Review Draft). Office of Solid Waste and Emergency Response, April 2013. <http://www.epa.gov/oswer/vaporintrusion/documents/vaporIntrusion-final-guidance-20130411-reviewdraft.pdf>

U.S. EPA, 2014c. OSWER Memo, Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors, OSWER Directive 9200.1-120, February 6, 2014. <http://www.epa.gov/oswer/riskassessment/pdf/superfund-hh-exposure/OSWER-Directive-9200-1-120-ExposureFactors.pdf>

U.S. EPA, 2014e. EPA's Vapor Intrusion Website. Last updated on Wednesday, June 6, 2014. www.epa.gov/oswer/vaporintrusion/

U.S. EPA, 2014f. OSWER Vapor Intrusion Assessment, Vapor Intrusion Screening Levels, Version 3.3.1, June 2014, found at EPA's Vapor Intrusion Website, www.epa.gov/oswer/vaporintrusion/

EPA, 2014g. Integrated Risk and Information System, National Center for Environmental Assessment, Office of Research & Development, USEPA. <http://www.epa.gov/ncea/iris/>
(updates added periodically).

Pressley, Miriam

From: Bastek, Brian
Sent: Wednesday, May 13, 2015 9:15 AM
To: O'Connor, David A.
Cc: Jim Peeples ; Anderson, Meredith
Subject: RE: Grenada Call

Dave,

Thanks for getting back with me. Only Meredith and I will be on this call on our end. Are the times you gave me central or eastern times?

Brian Bastek
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From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Tuesday, May 12, 2015 3:19 PM
To: Bastek, Brian
Cc: Jim Peeples ; Anderson, Meredith
Subject: Grenada Call

Brian:

I received your voice message. Jim and I will be in Grenada next week and look forward to your visit next Tuesday and Wednesday.

Jim and I are available for a discussion on the MW-20 soil gas evaluation by your technical group. We are available as follows:

Wednesday: 8:00 – 9:30AM and 11:30AM – 2:00PM
Thursday: 8:00 – 9:30AM and 11:30AM – 1:30PM
Friday: Noon – 2:00PM

Hopefully the times and dates work for a conference call this week.

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Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, May 12, 2015 1:15 PM
To: O'Connor, David A.
Subject: FW: Mobilization to Grenada for Additional Work

I received a message that your mailbox was full, so I'm trying to send this email again.

Brian Bastek
Environmental Engineer
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From: Bastek, Brian
Sent: Tuesday, May 12, 2015 11:57 AM
To: 'James Peeples'
Cc: O'Connor, David A.
Subject: RE: Mobilization to Grenada for Additional Work

Dave/Jim,

Looking forward to being onsite next week in Grenada. Will you both be down there?

On a separate note, we did receive our final comments back from both our HH risk assessor and our hydrogeologist on the MW-20 AOC report. Meredith and I would like to have a call with you both in order to discuss these comments and their concerns. Can you make some time in your schedules over the next few days?

Thanks.

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From: James Peeples [<mailto:JPeebles@tandmassociates.com>]
Sent: Wednesday, April 29, 2015 4:49 PM
To: Bastek, Brian
Cc: O'Connor, David A.
Subject: RE: Mobilization to Grenada for Additional Work

Brian,

That schedule seems good. You will get to see a lot of what is going on in that two-day period.

Thanks,



JAMES PEEPLES, PE
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From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Wednesday, April 29, 2015 4:27 PM
To: James Peeples
Cc: O'Connor, David A.
Subject: RE: Mobilization to Grenada for Additional Work

OK, I'll plan for the week of the 18th. I will let you know once my travel is booked. Unless you feel like I should be there on the 18th, I'll travel out that day and be onsite both the 19th and 20th and travel back on the 21st.

Thanks for getting back with me.

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From: James Peeples [<mailto:JPeebles@tandmassociates.com>]
Sent: Wednesday, April 29, 2015 3:03 PM
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Cc: O'Connor, David A.
Subject: RE: Mobilization to Grenada for Additional Work

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From: Bastek, Brian [<mailto:Bastek.Brian@epa.gov>]
Sent: Tuesday, April 28, 2015 1:14 PM
To: O'Connor, David A.
Cc: James Peeples
Subject: RE: Mobilization to Grenada for Additional Work

I can get there either the week of the 11th or the 18th, which ever you think is the better week to be there.

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Brian:

Do you know when you will be traveling to Grenada? Let Jim and me know as soon as you are able. Thanks.

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Cc: Anderson, Meredith; O'Connor, David A.
Subject: RE: Mobilization to Grenada for Additional Work

Yes, I will plan to be there sometime during that 3 week period. I'll try and work on the exact dates shortly. Thanks for the follow up.

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bastek.brian@epa.gov

From: James Peeples [<mailto:JPeebles@tandmassociates.com>]
Sent: Wednesday, April 22, 2015 2:22 PM
To: Bastek, Brian
Cc: Anderson, Meredith; David O'Connor (David.OConnor@Meritor.com)
Subject: Mobilization to Grenada for Additional Work

Brian,

We are not able to mobilize to the Grenada Site for the week of March 27th due to availability of the Driller, but will be mobilizing the week of May 4th. Do you have plans yet to visit the site while we are there? We still expect to be at the site for approximately three weeks, beginning on May 4th. Hopefully you will be able to visit the site during this time frame.

Thanks,



JAMES PEEPLES, PE
VICE PRESIDENT, SENIOR TECHNICAL ENVIRONMENTAL ENGINEER

4675 Lakehurst Court, Suite 250, Columbus, OH 43216 (b)(6)
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JPeebles@Tandmassociates.com | Tandmassociates.com



Hello Cleveland! T&M is pleased to announce the opening of our new office in downtown Cleveland. Read the press release

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Brian Bastek
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U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: James Peeples [<mailto:JPeebles@tandmassociates.com>]
Sent: Wednesday, April 22, 2015 2:22 PM
To: Bastek, Brian
Cc: Anderson, Meredith; David O'Connor (David.OConnor@Meritor.com)
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Pressley, Miriam

From: Bastek, Brian
Sent: Tuesday, April 28, 2015 1:14 PM
To: O'Connor, David A.
Cc: Jim Peeples
Subject: RE: Mobilization to Grenada for Additional Work

I can get there either the week of the 11th or the 18th, which ever you think is the better week to be there.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Tuesday, April 28, 2015 1:01 PM
To: Bastek, Brian
Cc: Jim Peeples
Subject: RE: Mobilization to Grenada for Additional Work

Brian:

Do you know when you will be traveling to Grenada? Let Jim and me know as soon as you are able. Thanks.

MERITOR

David A. O'Connor
Corporate Environmental Manager
Treasury Department
248.435.2706 tel
248.435.8354 fax
cel (b)(6)
david.oconnor@meritor.com

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Troy, Michigan 48084
USA
www.meritor.com

From: Bastek, Brian [mailto:Bastek.Brian@epa.gov]
Sent: Wednesday, April 22, 2015 4:56 PM
To: James Peeples
Cc: Anderson, Meredith; O'Connor, David A.
Subject: RE: Mobilization to Grenada for Additional Work

Yes, I will plan to be there sometime during that 3 week period. I'll try and work on the exact dates shortly. Thanks for the follow up.

Pressley, Miriam

From: Bastek, Brian
Sent: Thursday, April 2, 2015 2:22 PM
To: Hodoh, Ofia
Cc: Adams, Glenn
Subject: RE: Grenada Manufacturing VI Human Health Memo

Hi Ofia.

The review that was attached to your email below was not the review I requested. That was an old document from 2010. I'll resend the email with attachments that I sent up to Glenn back in early March 2015. Thanks.

Brian Bastek
Environmental Engineer
U.S. EPA, Region 4
RCRA Corrective Action and Permitting Section
Resource Conservation and Restoration Division
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8511
bastek.brian@epa.gov

From: Hodoh, Ofia
Sent: Thursday, April 02, 2015 1:42 PM
To: Bastek, Brian
Cc: Adams, Glenn
Subject: Grenada Manufacturing VI Human Health Memo

Hello Brian, attached please find the DRAFT human health risk comments on the Grenada Manufacturing Facility. A FINAL version of this memo will be issued upon review and approval by management.

Ofia Hodoh, M.S.
EPA Region 4
404.562.9176
hodoh.ofia@epa.gov

Grenada
Meredith Anderson

to:

Dave Jenkins

07/16/2012 02:44 PM

Hide Details

From: Meredith Anderson/R4/USEPA/US

To: Dave Jenkins/R4/USEPA/US@EPA,

I am having internet problems so disregard if you are getting this email twice. I have a couple questions about the MW-20 Work Plan and Addendum:

- 1) Do you agree that a sentinel well north of MW-20 is necessary, and not just the new west and east (up-gradient and down-gradient) wells?
- 2) Are you ok with the proposed depths and placement of the new PRB wells?

Thanks.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

Grenada
Meredith Anderson
to:
O'Connor David A.
05/10/2012 01:00 PM
Hide Details
From: Meredith Anderson/R4/USEPA/US
To: "O'Connor David A." <David.OConnor@Meritor.com>,

Thanks for the call last week about the sampling schedule. I appreciate you keeping me up to date. Did everything go as expected? (I bet you can't wait to visit again soon!)

I am planning to make a site visit during the new well installation, so please let me know the shedule for that work once it's developed.

Thanks, David.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
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Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov



Grenada - FINAL

Ofia Hodoh to: Meredith Anderson

08/17/2010 02:40 PM

Hi Meredith,

Attached you will find the FINAL version of the human health memo on the Review of the 2009 Indoor-Air Monitoring Report.



HH Memo_Grenada.doc

Ofia Hodoh, M.S.
USEPA Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303

404-562-9176 (office)
404-562-8842 (fax)
hodoh.ofia@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 4

61 Forsyth Street, S.W.
Atlanta, Georgia 30303

MEMORANDUM

July 29, 2010

SUBJECT: Review of the 2009 Indoor-Air Monitoring Report
ICE Industries (Formerly Grenada Manufacturing, LLC)
Grenada, MS

FROM: Ofia Hodoh
Technical Services Section
Superfund Support Branch

TO: Meredith Anderson, Corrective Action Specialist
RCRA Division

THROUGH: Glenn Adams, Chief
Technical Services Section
Superfund Support Branch

Per your request, I have reviewed the **2009 Indoor-Air Monitoring Report, for ICE Industries (Formerly Grenada Manufacturing, LLC), in Grenada, MS.**

On the TSS Request Form, you asked specifically that we review the document for compliance with human health exposure criteria. As a human health risk assessor, I have reviewed the ambient air data in comparison to EPA's draft Vapor Intrusion generic screening levels (EPA, 2002c) and the health based Regional Screening Levels (RSLs) for Industrial Air (EPA, 2010) and

From a human health risk assessment perspective, I have the following comments to offer:

General Comment:

The screening levels presented in the original workplan have been updated since the 2003 (formerly OTS) memorandum. These updated screening levels (RSLs), along with a detailed User's Guide and supplementary tables (EPA, 2010), can be accessed directly on-line or downloaded to your own computer. For the carcinogenic contaminants of concern (COCs) (benzene, 1,2-dichloroethane, methylene chloride, trichloroethene, 1,1,2-trichloroethane, tetrachloroethene and vinyl chloride), the formerly OTS proposed screening levels for a 1E-5 risk exposure in the commercial/industrial setting. For this review, TSS screened the

carcinogenic ambient air data against the current Industrial Air RSLs for a 1E-5 risk exposure (see revised Table 2-1 below). According to the workplan, the non-carcinogenic COCs (1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene and toluene) screening levels were derived from Table 2b of EPA's Draft Vapor Intrusion Guidance (EPA, 2002c). Since the 2002 draft Vapor Intrusion (VI) Guidance, there have been changes to the Reference Concentration (RfC) values for trans-1,2-dichloroethene (more conservative RfC) and toluene (less conservative RfC) see revised Table 2-1 below.

TSS strongly encourages users of this guidance to research the latest toxicity values for contaminants of interest from EPA's IRIS (IRIS, 2010).

Revised Table 2-1

	Target Indoor Air Screening Concentration for Non- Carcinogens (2003 - 2004)	Target Industrial Air Screening Concentration for Non- Carcinogens 2010	Target Indoor Air Screening Concentrations for Carcinogens (2003 - 2004)	Target Industrial Air Screening Concentrations for Carcinogens 2010
Chemical Name	HI=1 (ppbv)	HI=1 (ppbv)	Risk = 10-5 (ppbv)	Risk = 10-5 (ppbv)
Benzene	NA	NA	1.6	4.9
1,1-Dichloroethene	50	221	NA	NA
1,2-Dichloroethane	NA	NA	0.4	1.2
cis-1,2-Dichloroethene	8.8	no value	NA	NA
trans-1,2-Dichloroethene	18	66	NA	NA
Methylene chloride	NA	NA	25.4	75.2
Tetrachloroethene	NA	NA	1	3.1
Trichloroethene	NA	NA	3.7	11.4
1,1,2-Trichloroethane	NA	NA	0.5	1.4
Toluene	110	5813	NA	NA
Vinyl chloride	NA	NA	1.8	10.9

March 2009 Air Sampling Results for Ventilation Zones A and B, Table 4-1

1. The detections of the carcinogenic chemicals benzene and trichloroethene are all below their respective RSLs (based on a 1E-5 cancer risk) (EPA, 2010). No other reported detections for carcinogens in this table exceed RSLs for industrial air.
2. The detections of the non-carcinogenic chemicals 1,1-dichloroethene, cis-1,2-dichloroethene and toluene are all below their respective VI value (based on a Hazard Quotient of 1) (EPA, 2002c). No other reported detections for non-carcinogens in this table exceed the generic screening levels for VI.

August 2009 Air Sampling Results for Ventilation Zones A and B, Table 4-2

1. The detections of the carcinogenic chemicals benzene, methylene chloride and trichloroethene are all below their respective RSLs (based on a 1E-5 cancer risk) (EPA, 2010). No other reported detections for carcinogens in this table exceed RSLs for industrial air.
2. The detections of the non-carcinogenic chemicals cis-1,2-dichloroethene and toluene are all below their respective VI value (based on a Hazard Quotient of 1) (EPA, 2002c). No other reported detections for non-carcinogens in this table exceed the generic screening levels for VI.

March, August and October 2009 Air Sampling Results for Waste Sump Zone C, Table 4-3

1. The level of 1,1,2-trichloroethane (2.5 ppbV) on March 9, 2009 exceeds the industrial air RSL (1.4 ppbV) (EPA, 2010), but is within the EPA target cancer risk range (1E-6 to 1E-4). The duplicate sample collected from the same location at the same time was not detected for 1,1,2-trichloroethane. No other reported detections for carcinogens in this table exceed RSLs for industrial air.
2. The level of toluene (1,700 ppbV) on August 18, 2009 is less than the industrial air RSL screening value (5,813 ppbV) (EPA, 2010), based on a Hazard Quotient of 1. The duplicate sample collected from the same location at the same time had a level of 1,100 ppbV for toluene. Toluene was detected during the other two sampling events (March and October of 2009) however, it was below the VI screening value. The toluene detection is less than the industrial RSL of 5,813 ppbV (based on a Hazard Quotient of 1).
3. The detection of the non-carcinogenic chemical cis-1,2-dichloroethene is below its respective VI value (based on a Hazard Quotient of 1) (EPA, 2002c). No other reported detections for non-carcinogens in this table exceed the generic screening levels for VI.

Conclusion

The ambient air samples indicate that vapor intrusion is not a concern in Ventilation Zones A, B and C and therefore no remedial action is required at this present time.

If I can be of any further assistance or if you have any questions, please call me at 404 562 9176.

References:

EPA 1989. *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual, Part A*. Interim Final, EPA OERR, December 1989.

EPA 2002c. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*. Office of Solid Waste and Emergency Response, FR Notice November 29, 2002.

EPA 2010. Regional Screening Levels for Chemical Contaminants at Superfund Sites, May 2010.

http://www.epa.gov/reg3hwmd/risk/human/rbconcentration_table/Generic_Tables/index.htm

IRIS, 2010. Integrated Risk and Information System, National Center for Environmental Assessment, Office of Research & Development, USEPA. <http://www.epa.gov/ncea/iris/> (updates added periodically).



Grenada - MW-20 Work Plan and Addendum

O'Connor, David A.

to:

Meredith Anderson

09/14/2012 04:34 PM

Cc:

"James A. Peeples"

Hide Details

From: "O'Connor, David A." <David.OConnor@Meritor.com>

To: Meredith Anderson/R4/USEPA/US@EPA,

Cc: "James A. Peeples" <JPeebles@tandmassociates.com>

History: This message has been replied to.

2 Attachments



image001.gif MW-20 Work_Plan_9-12-12.pdf

Meredith:

Attached is the revised Plan with proposed Redline changes per our communications earlier this week. If you formally approve the plan, we will issue a Final Plan and begin the planning process to install the wells.

Contact me with any questions. Have a nice weekend.



MERITOR

David A. O'Connor

Corporate Environmental Manager

Environmental, Health and Safety Department

248.435.2706 tel

(b) (6) cel

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Troy, Michigan 48084 USA
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MW-20 Area Investigation
Work Plan
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

~~August~~ September 2012

TM
ASSOCIATES

545 Metro Place South
Dublin, Ohio 43017

MW-20 Area Investigation Work Plan
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

~~August~~September 2012

140539.270

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Figure 1-2	Spring 2010 TCE Concentrations Upper Most Aquifer (Shallow Wells)
Figure 1-3	Spring 2010 Potentiometric Surface Upper Most Aquifer Shallow Wells
Figure 2-1	Proposed Well Locations

Section 1

Introduction

Groundwater monitoring has been conducted at the ICE Industries, Inc. (ICE) facility (the "Site") in Grenada, Mississippi (Figure 1-1) since 1993. Groundwater samples collected from monitoring well MW-20 have historically contained low levels of volatile organic compounds (VOCs). During the most recent groundwater sampling event, conducted in the fall of 2011, the analytical results for the groundwater sample from this well were measured at 86 micrograms per liter ($\mu\text{g/L}$) of trichloroethene (TCE), 88 $\mu\text{g/L}$ of cis-1,2-dichloroethene (cis DCE), and less than 1 $\mu\text{g/L}$ of vinyl chloride. These concentrations are consistent with past sampling events. Figure 1-2, taken from the 2010 Annual Report, shows the estimated extent of TCE in Upper Zone groundwater. Figure 1-3, also from the 2010 Annual Report, is the Upper Zone Potentiometric Surface map. Upper Zone groundwater flow in the MW-20 area is northwestward, toward Riverdale Creek.

In comments regarding the 2009 Annual Monitoring Report, the United States Environmental Protection Agency (USEPA) indicated that work should be conducted to better define the extent of groundwater impact in the vicinity of well MW-20. Meritor will investigate the extent of groundwater impact near this location, and the Work Plan provided in this submittal describes the methods that will be used to complete the investigation. Upon approval of this Work Plan, Meritor will install an additional well or wells to better define the extent of VOC impact in the northern portion of the groundwater plume, particularly in the MW-20 area.

1.1 Facility History

The Grenada manufacturing facility was constructed by Lyon in 1961 and sold to Rockwell International, Inc. (Rockwell) in 1966. The Automotive Division of Rockwell operated a wheel cover manufacturing facility at the Site from 1966 to 1985, when the plant and property were sold to Textron Automotive Company (Textron), formerly Randall Textron. In 1997, Rockwell spun off its Automotive Division into a corporate predecessor to Meritor, Inc. In 1999, Textron sold the operations and property to Collins and Aikman Corporation, which later transferred the operation to Grenada Manufacturing, LLC (Grenada Manufacturing). In 2008, the plant and property were sold (and leased in part) to ICE.

Throughout much of its history, the facility was used to manufacture automobile wheel covers. Following the acquisition of the Site by ICE, the facility was converted to a stamping plant, providing stamp-formed parts for various industries.

1.2 Summary of Site Remedial Actions

Remedial activities at the Site began in 1990 when waste from the former on-site landfill (SWMU 3) was excavated for off-site disposal, and remediation has continued through 2010 with closure of the former Sludge Lagoon (SWMU 4). The remedial measures have either occurred as interim measures or within the framework of the RCRA Facility Investigation and Corrective Measures Study for the Site. Descriptions of the remedial measures performed are presented in the 2010 Annual Report. The 2010 Annual Report identifies additional documents that can be referenced to obtain further information regarding remedial measures that have been completed at the Site.

1.3 Site Conceptual Model

The stratigraphy at the Site is comprised of a surficial unit containing approximately 8 to 15 feet of clayey silt or silty clay overlying approximately 30 to 50 feet of saturated, fine to medium-grained sands that contain varying amounts of silt. Together, these soils are referred to as the "Upper Aquifer". Within the vicinity of the Main Plant, the sand unit is bisected by a discontinuous clay unit at a depth of 20 to 30 feet below ground surface (bgs). This clay unit was not observed in the western portion of the Site or in the vicinity of the Permeable Reactive Barrier near Riverdale Creek. At the base of the Upper Aquifer the sand unit is a thinly-bedded, slightly-sandy, clayey, silt, which is encountered at depths ranging from 47 to 60 feet bgs and serves as an intermediate confining unit, acting as an aquitard to separate the upper and lower aquifers. This layer is approximately 16 feet thick and has been identified as marl exhibiting much higher blow counts than the overlying soils. Below this unit is another sand layer that comprises the "Lower Aquifer", which is not impacted by VOCs present in the upper aquifer.

The Upper Aquifer is the primary horizontal transport pathway for the Site. Groundwater in this aquifer is generally under semi-confined conditions, flows to the northwest, and discharges into Riverdale Creek. It is believed that Riverdale Creek is in direct communication with the Upper Aquifer, and is a gaining stream in this area.

1.4 Work Plan Organization

The remainder of this Work Plan describes the methods to be used to seek to delineate the northern extent of VOC impact in groundwater. All work will be conducted in accordance with the Site-specific Health and Safety Plan and the approved Quality Assurance Project Plan (QAPP) for this Site.

Section 2

MW-20 Area Investigation

2.1 New Well Locations

MW-20 is located near the south edge of a gravel road that runs parallel to railroad tracks and the northern boundary of the Site. This road is used by trucks hauling material to and from the Dunham, Inc. yard located northeast of the Site. Dunham has an easement with the Grenada Railway to use the haul road. North of the haul road are residential properties with back yards that are close to the haul road (Figure 2-1). The residential property lines are adjacent to the north side of the haul road, although the exact property boundaries are not known. The distance from MW-20 to the nearest house is approximately 80 feet.

MW-20 is located 38 feet south of the nearest resident's fence. The distance between the road and the residential fence north of MW-20 is approximately 10 feet. Overhead electric lines running parallel to the north side of the haul road are approximately 12 feet from the road. Therefore, there is very limited access to a suitable drilling location north of MW-20. A boring will be installed north of MW-20 as close to the overhead power lines as can be accomplished safely.

If the groundwater sample collected north of MW-20 is found to contain VOCs at or above MCLs, the boring will be abandoned, and the northern extent of impact in the vicinity of MW-20 will be evaluated using wells installed east and west of the MW-20 location (Figure 2-1). The eastern location is on the north side of the haul road, south of the residential area. The western location is on the west side of Route 332, north of the railroad crossing. Taken together with the potentiometric surface, the groundwater concentrations of VOCs at the locations described above should enable delineation of VOC impact in the northern part of the plume near MW-20.

Utilities will be marked in areas where borings will be installed. BC will contact the State of Mississippi to coordinate work in the Route 332 right-of-way, and is currently in contact with Grenada Railway regarding access to the east location and the location north of well MW-20.

2.2 Groundwater Investigation

The groundwater investigation will proceed in the following manner:

1. The boring location north of MW-20 (Figure 2-1) will be installed and a depth series of groundwater samples will be collected through the Geoprobe® tooling and field screened using the Color-Tec® field screening methodology. A groundwater sample from the vertical zone with the highest field screening value will be sent to a laboratory for VOC analysis. The sample will be analyzed with a 24-hour turn-around time for analysis. If the analysis of the sample and/or the field screening indicates exceedances of one or more MCLs, the boring will be abandoned and the investigation will proceed in the areas east and west of MW-20 as described in step number 2, below. If the analytical results indicate no exceedances of MCLs, a replacement well for MW-20 will be installed, developed and sampled at this boring location; and steps 2 through 4, below, will not apply. Well MW-20 will be maintained and the new well will replace MW-20 in the sampling program and act as the new northern sentinel well for the groundwater monitoring program. The well will be labeled MW-20R, and will be sampled at the frequency indicated for MW-20 in the sampling plan (following the initial sample obtained for this investigation). The existing

well MW-20 will be added to the group of wells that are sampled quadrennially until it can be demonstrated that it is no longer needed in the sampling program.

2. If the analytical results for the groundwater sample obtained from the boring north of MW-20 indicate an exceedance of MCLs for one or more VOCs, the groundwater investigation will proceed by evaluating groundwater at locations upgradient (east) and downgradient (west) of MW-20.
3. A series of three direct-push soil borings will be advanced at the east and west locations shown on Figure 2-1. The borings will be used to better define the nature and extent of VOC impact at these two locations and to select appropriate locations to install sentinel wells.
4. The sampling frequency for wells installed east and west of MW-20 will follow the timing that well MW-20 is sampled (based on the groundwater monitoring program). Well MW-20 will remain in the sampling program (unless the location to the north of MW-20 is found to be unaffected by VOCs above MCLs, as discussed in step 1, above).

2.3 Installation and Sampling Methods

Prior to completion of any borings, utilities in the affected areas will be marked. BC will contact the state of Mississippi to coordinate work in the Route 332 right-of-way, and is currently in contact with Grenada Railway regarding access to the east location and the location north of MW-20.

For all boring locations, a Waterloo Sampler® will be advanced using a Geoprobe® until the screened portion of the sampler enters the water table. The first groundwater sample will be obtained from the Waterloo Sampler® (at the water table) and the sample will be field-screened using Color-Tec® methods to detect the presence of VOCs. A groundwater sample will also be collected from the interval for potential laboratory analysis. The Waterloo Sampler® will then be advanced two feet further into the aquifer and this procedure will be repeated. Sampling will continue as described above until reaching a depth of 25 feet, or 15 feet into the zone of saturation to a depth similar to the depth of MW-20. If the field screening indicates that no impacted groundwater is present at a given boring location, a monitoring well will be installed near this location and sampled to confirm the absence of VOCs (well installation methods are described below). Alternatively, if the field screening indicates the presence of VOC-impacted groundwater, the reserved groundwater sample from the vertical interval with the highest field screening value will be sent to the laboratory for VOC analysis and a monitoring well will not be installed at this location.

Where monitoring wells are to be installed, they will be constructed of 1.5-inch diameter polyvinyl chloride (PVC), with 15-foot pre-pack well screens. The wells will be installed through direct-push tooling near the location of the soil boring. A foam bridge will be placed above each well screen to keep sealing materials out of the screened interval. The interval above each well screen will be filled with bentonite grout emplaced through tremie pipe, and a steel flush-mount well protector will be set in a concrete pad. The wells will be developed no sooner than 24 hours after completion. Following development, each well will be purged and sampled for VOCs according to Site groundwater monitoring procedures and following the protocols outlined in the QAPP.

Borings that are not used for well installation will be abandoned using bentonite grout emplaced through a tremie pipe. The grout will extend to within one-foot of the ground surface, and the upper foot at the ground surface will be backfilled with soil and compacted.

Field equipment, such as non-dedicated sampling or down-hole equipment will be decontaminated between use at each sampling location following the procedures outlined in the QAPP. Purge water and soils generated during the sampling event and well installation will be placed into Department of Transportation approved 55-gallon steel drums and transported to the on-site staging area for investigation

derived waste (IDW). Groundwater analytical results will be evaluated to characterize the purge water and soils for transportation and disposal by a licensed waste hauler retained by Meritor.

The new well(s), the soil boring location(s), and the utility markings will be surveyed by a licensed professional surveyor. Water levels measured in the wells will be incorporated into future Site Upper Zone potentiometric surface maps.



Section 3

Schedule and Reporting

Within 60 days of receipt of the sample results from the new wells, Meritor will submit a letter report detailing the findings. Soil boring logs and well construction diagrams will be included, along with well development and sampling forms and the analytical results. A potentiometric map of the Upper Zone will be generated using groundwater elevations from existing wells and the new wells. This map will be used to define the extent of VOC impact in groundwater north of the Site using the location(s) of the new well(s) to effectively bracket the MW-20 location, and thus provide better definition of VOC impact in the northern portion of the plume.

Meritor plans to install the new well(s) within 30 days following approval of this Work Plan, assuming that the needed access agreements are in place with the railroad, and will notify USEPA of the date that the work will begin.



References

Brown and Caldwell. 2006. Quality Assurance Project Plan.

Brown and Caldwell. 2008. Groundwater Monitoring Program Optimization at the Grenada Manufacturing Facility Site, Grenada, Mississippi.

Brown and Caldwell. 2010. 2009 Indoor-Air Monitoring Report, ICE Industries.

Brown and Caldwell. 2011. Annual Monitoring Report, Calendar Year 2010. Grenada Manufacturing, LLC.

USEPA. Letter to ArvinMeritor, Inc. July 12, 2011. "2009 Annual Monitoring Report, September 2010, Grenada Manufacturing, LLC, Grenada, MS, MSD 007 037 278."

Figures

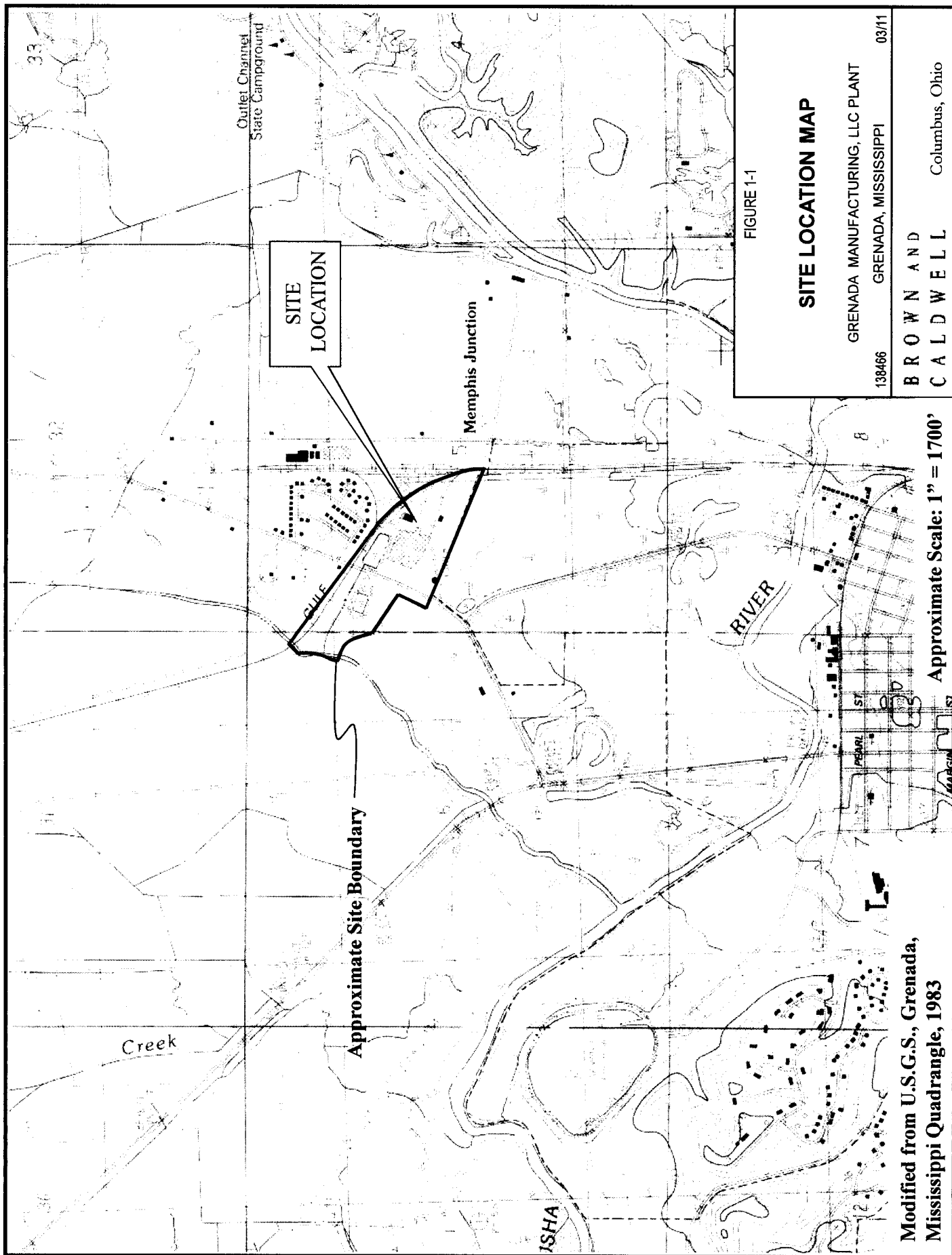


FIGURE 1-1

SITE LOCATION MAP

GRENADA MANUFACTURING, LLC PLANT

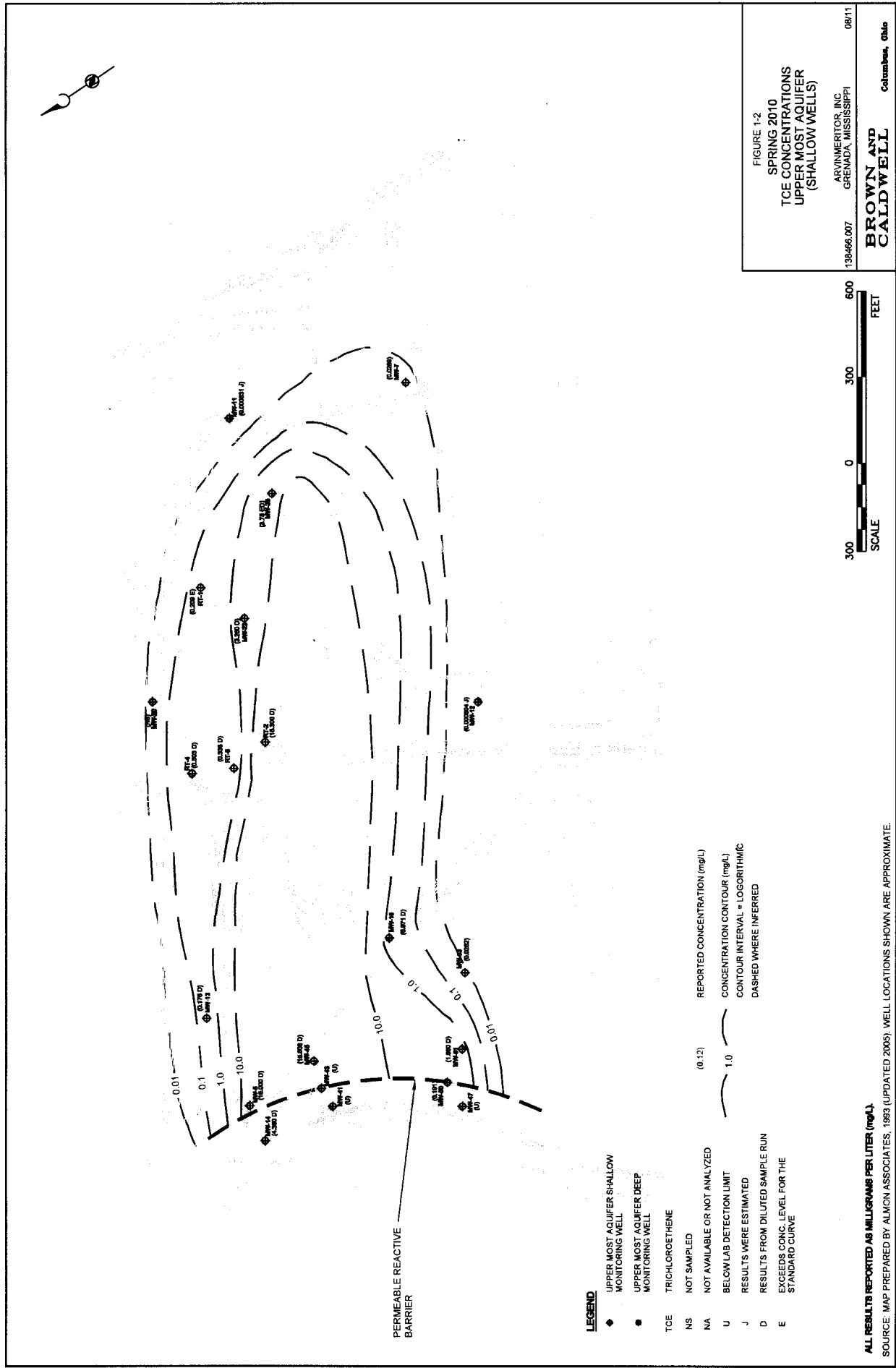
GRENADA, MISSISSIPPI

03/11

138466

BROWN AND
CALDWELL

Columbus, Ohio



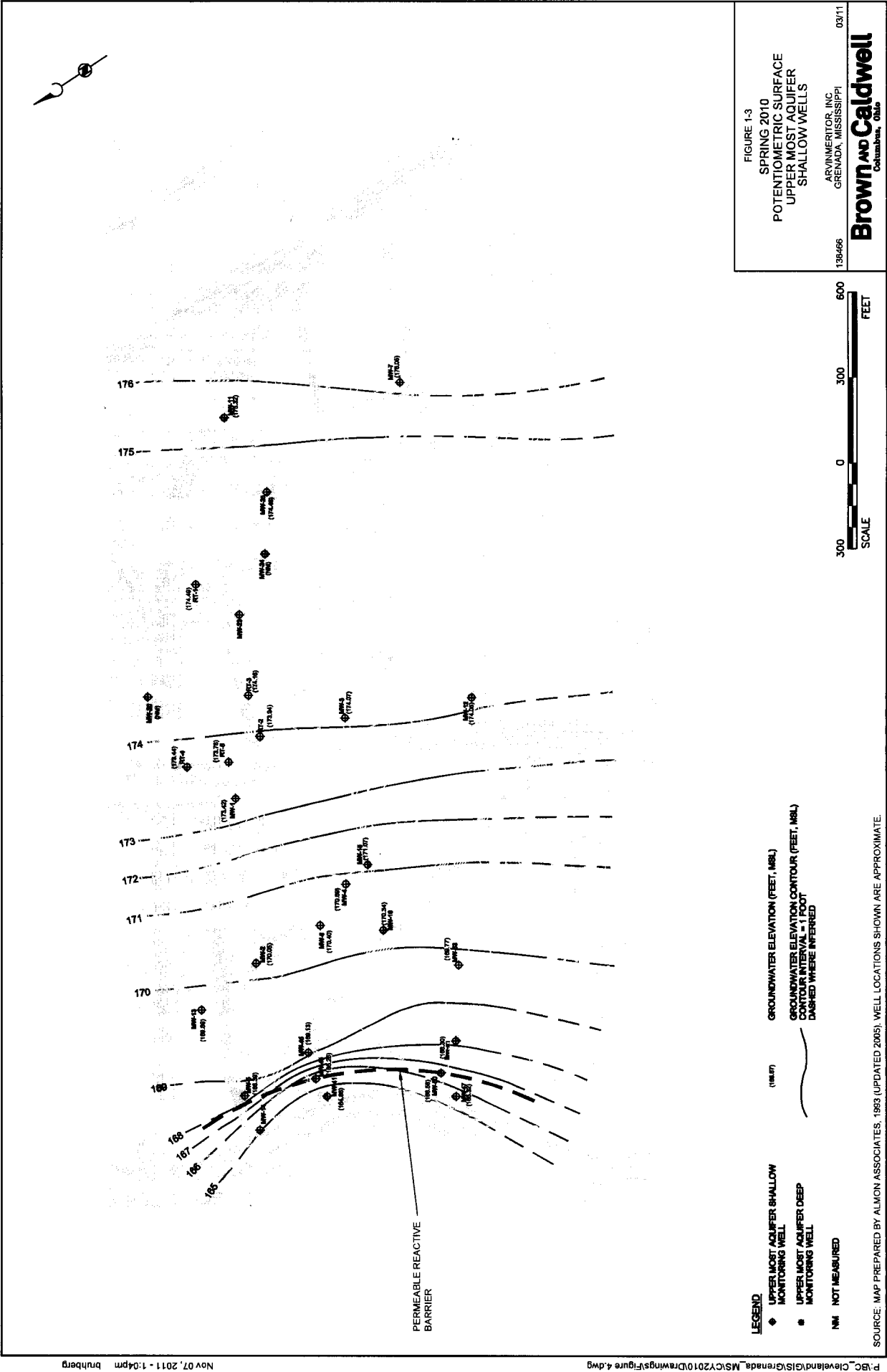


Figure 2-1
Proposed Well Locations



Addendum 1

MW-20 Area Investigation
Work Plan Addendum 1
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

~~August-September 2012~~

TM
ASSOCIATES

545 Metro Place South

Dublin, Ohio 43017

MW-20 Area Investigation Work Plan Addendum 1
Grenada Manufacturing, LLC
Grenada, Mississippi

Prepared for

Meritor, Inc.

(f.k.a. ArvinMeritor, Inc.)

Troy, Michigan

August ~~September~~ 2012

140539.270



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Figure 2-1 Proposed Well Locations



Section 1

Introduction

In a letter dated March 16, 2012 from the United States Environmental Protection Agency (EPA) to Meritor, Inc. (Meritor), EPA requested the installation of monitoring wells in addition to the wells indicated in the Work Plan for the MW-20 Area Investigation. In subsequent discussions with EPA, the scope of this additional work was further clarified. The purpose of this addendum to the MW-20 Area Investigation Work Plan is to define the locations of the proposed new wells and the methods that will be used to install, develop and sample the new wells.

Section 2

PRB Area Investigation

2.1 New Well Locations

Two wells will be installed at both the northern and southern ends of the PRB at locations A and C shown on Figure 2-1. The two locations (A and C) are approximately 10 feet back from each end of the wall and 10 feet upgradient of the wall. In addition, a deep well will be installed near the location of MW-14 and is designated as Well B on Figure 2-1. Minor field adjustment of these locations may be required based on the conditions encountered in the field. The letters indicated on Figure 2-1 are included as place holders for the permanent well names, which will be designated at the time of well installation based on the existing sequence of well numbers at the Site and the order in which the wells are installed.

2.2 Installation and Sampling Methods

Soils will be logged continuously to total depth (the encounter of the clay Marl) for each boring location (A, B and C). Representative portions of each 4-foot soil interval will be field screened for the presence of VOCs using the Color-Tec method for screening soils. If the field screening indicates the presence of VOCs, the depth interval will be noted. After the boring has been completed to total depth (the clay Marl) groundwater monitoring wells will be installed in zones with the highest field screening results for VOCs using the methods described below. At locations A and C, two wells will be installed in zones where VOC impact is identified. At location B a single well will be installed at the interval with the highest field screening results.

If no zones of VOC impact are identified with the field screening, two wells will be placed at each end of the PRB (locations A and C). In this case, the wells would be constructed with 20-foot screens centered on the upper and lower PRB panels in these locations. At location B, if the field screening does not indicate a zone of VOC impact, a well will not be installed with a 20-foot screen centered within the lower zone.

All monitoring wells will be constructed of 1.5-inch diameter polyvinyl chloride (PVC), with 15-foot pre-pack well screens, installed through direct-push tooling at the location of the soil boring. The screen intervals for the wells installed at the ends of the PRB will approximate the center of the lower panel for the deep wells and the center of the shallow PRB panel for the shallow well. The base of the deep well in the location of MW-14 will be placed just above the lower confining clay layer at this location.

A foam bridge will be placed above each well screen to keep sealing materials out of the screened interval. The interval above each well screen will be filled with bentonite grout emplaced through tremie pipe, and a steel flush-mount well protector will be set in a concrete pad. The wells will be developed no sooner than 24 hours after completion. Following development, each well will be purged and sampled for VOCs according to Site groundwater monitoring procedures and following the protocols outlined in the Quality Assurance Project Plan (QAPP).

Field equipment, such as non-dedicated sampling or down-hole equipment will be decontaminated between use at each sampling location following the procedures outlined in the QAPP. Purge water and soils generated during the sampling event and well installation will be placed into Department of Transportation approved 55-gallon steel drums and transported to the on-site staging area for investigation

derived waste (IDW). Groundwater analytical results will be evaluated to characterize the purge water and soils for transportation and disposal by a licensed waste hauler retained by Meritor.

The new wells, the soil boring locations, and the utility markings will be surveyed by a licensed professional surveyor. The new wells will be sampled semiannually as a part of the ongoing monitoring program for the site, until it is determined that a longer duration between sampling events is appropriate for one or more of the wells. At that time, a new sampling frequency will be proposed and submitted to EPA for review and approval. Water levels measured in the wells will be incorporated into future potentiometric surface maps.



Section 3

Schedule and Reporting

Within 60 days of receipt of the sample results from the new wells, Meritor will submit a letter report detailing the findings. Soil boring logs and well construction diagrams will be included, along with well development and sampling forms and the analytical results. Potentiometric maps of the Upper and Lower Zones will be generated using the groundwater elevations from existing wells and the new wells.

Meritor plans to install the new wells in within 30 days following approval of this Work Plan Addendum, and will notify USEPA of the date that the work will begin.



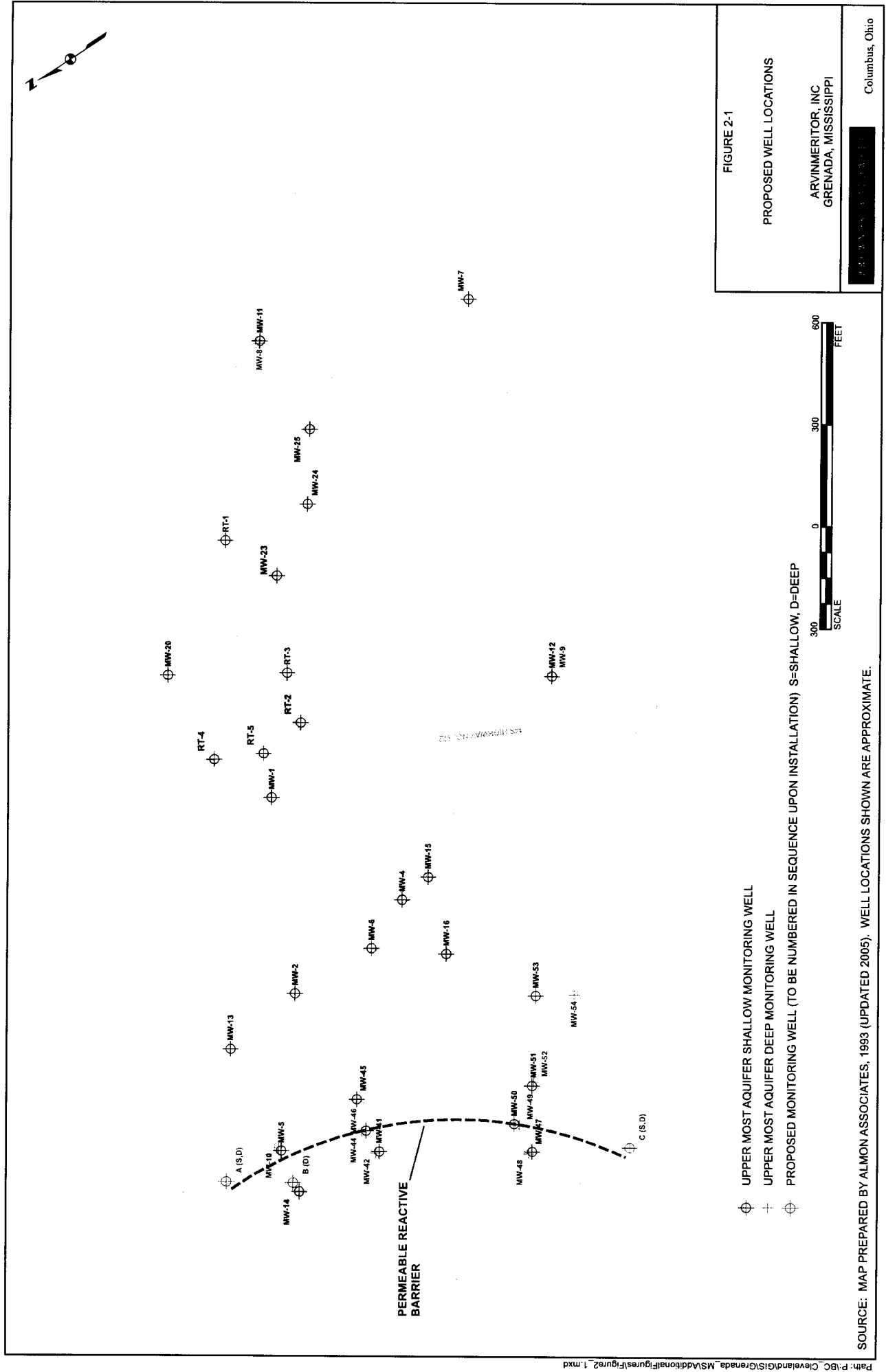
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Brown and Caldwell. 2008. Groundwater Monitoring Program Optimization at the Grenada Manufacturing Facility Site, Grenada, Mississippi.

Brown and Caldwell. 2011. Annual Monitoring Report, Calendar Year 2010. Grenada Manufacturing, LLC.

Figures





Grenada - MW-20 Work Plan and Addendum

Tue 08/28/2012 1:00 PM - 1:30 PM

Attendance is **required** for Meredith Anderson

Chair: David.OConnor@Meritor.com

Location: Conference Call

Required:	jpeeples@tandmassociates.com, anderson.meredith@epa.gov
Optional:	lhsan@tandmassociates.com

Description

DAVID O'CONNOR invites you to attend an audio conference.

Conference dial-in number: 1-
access code

(b)(6)

Personal Notes

Grenada - Phone Call

Meredith Anderson

to:

O'Connor, David A.

08/06/2012 10:33 AM

Hide Details

From: Meredith Anderson/R4/USEPA/US

To: "O'Connor, David A." <David.OConnor@Meritor.com>,

I have a conference call at 3 and another at 4:30. I am available anytime tomorrow.

Meredith C. Anderson

Environmental Engineer

RCRA Div/Corrective Action Section

EPA-Region 4

61 Forsyth Street, SW

Atlanta, GA 30303

404-562-8608

404-562-8439 (fax)

anderson.meredith@epa.gov

-----"O'Connor, David A." <David.OConnor@Meritor.com> wrote: -----

To: Meredith Anderson/R4/USEPA/US@EPA

From: "O'Connor, David A." <David.OConnor@Meritor.com>

Date: 08/03/2012 11:08AM

Subject: Grenada - Phone Call

Meredith:

Are you and Dave Jenkins available today after 3:00 pm to discuss Grenada with Jim Peeples and me?



MERITOR

David A. O'Connor

Corporate Environmental Manager

Environmental, Health and Safety Department

248.435.2706 tel

(b)(6)

cel

Meritor, Inc.

2135 West Maple Road

Troy, Michigan 48064 USA

meritor.com

From: Meredith Anderson [mailto:Anderson.Meredith@epamail.epa.gov]
Sent: Thursday, August 02, 2012 9:24 AM
To: O'Connor, David A.; jpeeples@brwnald.com
Subject: Fw: New ColorTec info

It appears that my previous email with the many attachments from Dave Jenkins was too large to go through. I will send his attachments along in several smaller groupings. In the meantime, here is another resource he suggests. Thank you.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

----- Forwarded by Meredith Anderson/R4/USEPA/US on 08/02/2012 09:22 AM -----

From: Dave Jenkins/R4/USEPA/US
To: Meredith Anderson/R4/USEPA/US@EPA, Galo Jackson/R4/USEPA/US@EPA, jenkins.dave@epa.gov, Bill Denman/R4/USEPA/US@EPA
Date: 08/02/2012 08:18 AM
Subject: New ColorTec info

Recent ColorTec User Manual: (See attached file: 120418 04-18-2012 ColorTec Manual_Revision.pdf)

Check this Vendor web site:

Color-Tec has been utilized throughout the US for assessment, remediation and monitoring of chlorinated solvents. TCE, PCE, Vinyl chloride, DCE, etc. OVA is one tool, but to reach 3 ppb in groundwater and produce excellent correlation with lab analysis, the Color-Tec system is an economical tool to add to the work plans. It will allow for proper placement of monitoring wells and confidence in boundaries of a plume. Please click on our link to learn more: <http://gros.us/colortecforchlsolvent.html>

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Grenada - Phone Call

Meredith Anderson

to:

O'Connor, David A.

08/03/2012 11:28 AM

Hide Details

From: Meredith Anderson/R4/USEPA/US

To: "O'Connor, David A." <David.OConnor@Meritor.com>,

I sent an email earlier this week indicating that a call today would not work for Dave Jenkins - perhaps it didn't go through or could I be using an old email address? Sorry about that. In lieu of a call, I sent color tec info for reference until we can get a call set up. Do you have time next week? Send me your availability and I will coordinate with Dave. I will also look for my earlier message and resend. Sorry for the confusion.

Meredith

Meredith C. Anderson

Environmental Engineer

RCRA Div/Corrective Action Section

EPA-Region 4

61 Forsyth Street, SW

Atlanta, GA 30303

404-562-8608

404-562-8439 (fax)

anderson.meredith@epa.gov

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Date: 08/03/2012 11:08AM

Subject: Grenada - Phone Call

Meredith:

Are you and Dave Jenkins available today after 3:00 pm to discuss Grenada with Jim Peeples and me?



MERITOR

David A. O'Connor

Corporate Environmental Manager

Environmental, Health and Safety Department

248.435.2706 tel

(b)(6) cel

Meritor, Inc.
2135 West Maple Road
Troy, Michigan 48084 USA
meritor.com

From: Meredith Anderson [<mailto:Anderson.Meredith@epamail.epa.gov>]
Sent: Thursday, August 02, 2012 9:24 AM
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O'Connor, David A.

to:

Meredith Anderson

08/03/2012 11:08 AM

Hide Details

From: "O'Connor, David A." <David.OConnor@Meritor.com>

To: Meredith Anderson/R4/USEPA/US@EPA,

History: This message has been replied to.

1 Attachment



image001.gif

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Environmental, Health and Safety Department

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Grenada 4/26/12 meeting summary

Meredith Anderson

to:

O'Connor David A., Al-Fayyomi Ihsan, Jim Peeples

04/30/2012 05:54 PM

Cc:

Dave Jenkins

Bcc:

Meredith Anderson

Hide Details

From: Meredith Anderson/R4/USEPA/US

To: "O'Connor David A." <David.OConnor@Meritor.com>, "Al-Fayyomi Ihsan"

<IAIFayyomi@brwnald.com>, "Jim Peeples" <jpeeples@brwnald.com>,

Cc: Dave Jenkins/R4/USEPA/US@EPA

Bcc: Meredith Anderson/R4/USEPA/US

History: This message has been forwarded.

David,

Thanks for meeting with Dave Jenkins and I on 4/26/12 in Atlanta. As with our previous meeting, the Brown and Caldwell offices here in Atlanta were very convenient and comfortable. I appreciate you, Ihsan, and Jim making the effort to travel to Atlanta.

I'd like to summarize the meeting and the key points of agreement for our records:

- * Discussion focused on the items addressed in the 3/16/12 and 4/11/12 letters from EPA to Meritor, Inc. concerning the effectiveness of the PRB, potential off-site migration of site contaminants near MW-20, and other on-site increases in contaminants.
- * Additional investigations will take place near MW-20 (new wells installed north, up-gradient, and down-gradient of MW-20 at edge of plume), and MW-20 will remain in place for future monitoring. Investigations will begin as soon as possible (summer 2012).
- * If offsite migration of VOCs in the residential area is identified, swift follow-up investigations, monitoring, and community engagement activities will proceed, with remediation and response actions if warranted.
- * New well clusters (shallow/deep) will be installed at the north and south ends of the PRB to determine if site contaminants are migrating around the ends of the wall (to be conducted as soon as possible (summer 2012)).
- * A new deep well will be installed near MW-14 (to be conducted as soon as possible (summer 2012)).
- * A summary of past indoor air monitoring results will be prepared and presented to EPA with a request to terminate indoor air sampling. EPA will consider the request and supporting data and make a determination about future indoor air monitoring.
- * The 2011 monitoring report will be submitted to EPA in June 2012. All 2011 data (and future monitoring data) will also be submitted in EPA Region 4's electronic data deliverables (EDD) format.
- * 2012 quadrennial monitoring will take place the week of 4/30/12. Data will be provided to the EPA in Region 4's EDD format within 48 hours of validation.
- * The 2012 monitoring report will be submitted to the EPA by the end of the calendar year.
- * Per the 2010 HSWA permit, semi-annual reports will be submitted to EPA documenting the status of all SWMUs, summarizing activities undertaken, and describing any issues arisen (one report will be the annual monitoring report; the other, an informal summary letter).
- * A comprehensive effectiveness review of the PRB, including costs of O&M/iron rejuvenation/monitoring and estimated clean-up timeframes, will be conducted and submitted to EPA as soon as prepared by consultant.
- * All graphs will be prepared in log form, with consistent axes and MCLs indicated. All contour maps will indicate the corresponding MCLs as well.

- * For all future sampling, sample turbidity will be <10 NTU.

Issues that may be discussed at a later date are:

- * The need for an additional monitoring well cluster downgradient of the PRB between the existing well clusters.
- * The need for a new monitoring well to replace MW-2.
- * Arsenic as a COC if impacts are found in Riverdale Creek.

Please let me know if I have summarized any portions of this meeting incorrectly or if you have additional items to include. Thank you and stay cool in Mississippi this week! Any snakes hanging from trees yet?

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

Grenada 4/26/12 meeting summary

Meredith Anderson

to:

O'Connor David A., Al-Fayyomi Ihsan, Jim Peeples

04/30/2012 05:54 PM

Cc:

Dave Jenkins

Bcc:

Meredith Anderson

Hide Details

From: Meredith Anderson/R4/USEPA/US

To: "O'Connor David A." <David.OConnor@Meritor.com>, "Al-Fayyomi Ihsan"

<IAIFayyomi@brwnald.com>, "Jim Peeples" <jpeeples@brwnald.com>,

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Meredith C. Anderson
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RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
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404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov



Grenada County CDBG ED Project

Woody Sample

to:

Meredith Anderson

09/06/2012 05:25 PM

Hide Details

From: Woody Sample <johnwoodsampl@yahoo.com>

To: Meredith Anderson/R4/USEPA/US@EPA,

Please respond to johnvwoodsampl@yahoo.com

History: This message has been replied to.

Meredith:

Grenada County is seeking CDBG monies to implement roof and interior building improvements to the County owned building presently housing Grenada Stamping. To your knowledge of the area, will any interior building or roof improvements be effected by any condensations issues at the site? There is no digging proposed in the implementation of the roof and building improvements.

Your timely response will be greatly appreciated.

Thanks!

Woody Sample



Grenada HZWA Permit Modification

Al-Fayyomi, Ihsan

to:

Meredith Anderson

08/25/2010 04:23 PM

Cc:

"O'Connor, David A."

Hide Details

From: "Al-Fayyomi, Ihsan" <IAIFayyomi@brwncaid.com>

To: Meredith Anderson/R4/USEPA/US@EPA,

Cc: "O'Connor, David A." <David.OConnor@ArvinMeritor.com>

History: This message has been replied to.

1 Attachment



Ihsan Al-Fayyomi.vcf

Meredith;

Good afternoon, I am just following up on my previous e-mail regarding the deletion of the air monitoring program from the permit as it was advised by Don Webster. Please let me know if there is anything else that you need from me to get the issue resolved. Have a great day and I look forward to talking with you soon.





Grenada Indoor Air Report

Meredith Anderson to: Ofia Hodoh

Bcc: anderson.meredith

03/02/2010 10:10 AM

Hi, Ofia,

I wanted to check in with you to make sure you found the CDs of the Grenada Indoor Air Report.

Hopefully, they have made your job easier - it's quite a report! Let me know how your review is going and if you need anything else from me. Thanks for your help.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov



Grenada Indoor Air Report on CDs
Meredith Anderson to: jpeeples, IAlFayyomi
Bcc: anderson.meredith

02/19/2010 04:52 PM

Thank you for the CDs of the Grenada Indoor Air Report. I received them this week and forwarded them to our technical reviewer. I'll be in touch with you about any comments she has. Thank you.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov



Grenada Manufacturing Draft HSWA Permit, Fact Sheet, and Public Comment Period

Meredith Anderson to: Toby_Cook, dwilliams, David.OConnor,
JSchiff

06/03/2010 02:02 PM

Cc: knight.karen, Greg Luetscher, RobertG Stewart
Bcc: anderson.meredith

To keep everyone up to date on the permit renewal process, below is a brief update on recent activities:

The 45 day public comment period for the Grenada Manufacturing LLC draft HSWA permit began on May 28, 2010 and will conclude on July 12, 2010. A Public Notice was published in the Grenada Star on 5/28 and 6/1 and will also be published on 6/4 and 6/8. The Fact Sheet was mailed to a site mailing list which included local residents, local officials, and State and Federal stakeholders. Additionally, a copy of the draft permit and the Fact Sheet were left at the site information repository at the local library, and Don Williams has a copy for the facility information repository as well. Attached for your records are electronic versions of these documents.

Also, I overviewed the sludge lagoon solidification process last week with field personnel from EPA's SEDS office/Athens and was pleased to see that it is progressing very well. Field operations were very professional, and the crew was extremely hospitable and helpful in explaining the technical process, the challenges (and solutions) they have encountered, and the remaining stages of the project. Barring unforeseen delays, they are expected to complete this phase of the cleanup by end of July.

Please feel free to contact me if you have any questions or comments on the enclosed information.



Grenada Draft HSWA Permit.2010 Permit Renewal.052110.mca.doc



Grenada Fact Sheet.2010 Permit Renewal.052110.mca.doc



Grenada Site Location Map.Figure 1.2010 Permit Renewal.pdf



Grenada SWMU Site Map.Figure 2.2010 Permit Renewal.pdf



Grenada Public Notice.2010 Permit Renewal.052810.mca.doc

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov



Grenada Manufacturing LLC HSWA Permit renewal

Meredith Anderson to: JSchiff

Bcc: anderson.meredith

04/30/2010 03:02 PM

Mr. Schiff,

As a follow-up to my email of 3/19/2010 concerning the Preliminary Draft HSWA Permit for the Grenada Manufacturing LLC facility in Grenada, MS, I am contacting you to inquire about comments from Textron Inc. on the draft permit. The permit renewal process is moving forward, and I currently expect to be scheduling the public comment period to begin sometime in June. I will keep you abreast of our exact schedule as it becomes clearer to me. If there are any comments from Textron pertaining to the Preliminary Draft permit, please let me know as soon as possible. If you feel there is a need to have a conference call to discuss comments you may have, please let me know that as well. I am happy to set that up. The permit does not differ in any significant way from the draft 2008 permit prepared by Don Webster, EPA - only the formatting has been updated per our program requirements.

Thank you for your input in this process. I will keep you informed about the permit renewal schedule as we proceed.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov



Grenada Manufacturing site - Fw: Meeting this week-MDEQ participation

Meredith Anderson to: Carla_Brown

04/25/2012 11:51 AM

Below is the call-in info for tomorrow's meeting with Meritor at 1:30. Glad you can join us. Please forward to Kyle and any others, as needed. Thank you.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

----- Forwarded by Meredith Anderson/R4/USEPA/US on 04/25/2012 11:49 AM -----

From: "O'Connor, David A." <David.OConnor@Meritor.com>
To: Meredith Anderson/R4/USEPA/US@EPA
Cc: "Al-Fayyomi, Ihsan" <IAIFayyomi@brwnald.com>, "Jim Peebles" <jpeeples@brwnald.com>
Date: 04/25/2012 08:24 AM
Subject: RE: Meeting this week-MDEQ participation

Meredith:

The numbers below are for the call-in to our discussions tomorrow afternoon. Please call me today with any questions; otherwise I will see you and David tomorrow.

Phone No.: 1-877-929-7754

Access Code: 8559392#



MERITOR

David A. O'Connor
Corporate Environmental Manager
Environmental, Health and Safety Department
248.435.2706 tel

(b)(6)

Meritor, Inc.
2135 West Maple Road
Troy, Michigan 48084 USA
meritor.com

From: Meredith Anderson [mailto:Anderson.Meredith@epamail.epa.gov]

Sent: Tuesday, April 24, 2012 3:53 PM

To: O'Connor, David A.

Subject: Meeting this week-MDEQ participation

Hi Dave,
MDEQ would like to participate in our meeting this week via conference call. They are interested in keeping up to date on the issues we will be discussing. Would you be able to arrange for a conference line? Thanks.

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

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Grenada Manufacturing Site - MW-20 Area Investigation Report and Work Plan

James Peeples

to:

Meredith Anderson

12/17/2012 08:16 PM

Cc:

"O'Connor, David A.", "Furlough, Linda", Ihsan Alfayyomi

Hide Details

From: James Peeples <JPeebles@tandmassociates.com>

To: Meredith Anderson/R4/USEPA/US@EPA,

Cc: "O'Connor, David A." <David.OConnor@Meritor.com>, "Furlough, Linda"

<Linda.Furlough@Meritor.com>, Ihsan Alfayyomi <IAlfayyomi@tandmassociates.com>

History: This message has been forwarded.

1 Attachment



Grenada MW-20 Area Investigation and Additional Work Plan.pdf

Meredith,

Please find attached the report for the MW-20 Area Investigation completed in October 2012 in the area adjacent to the Grenada Manufacturing Plant in Grenada, MS. The report provides a summary of the work completed and the field and analytical data obtained from the investigation. As you were aware from your time at the site during the investigation, additional work will be needed to delineate the zone of groundwater impact, determine the source of the impact, and evaluate soil gas in this area. Due to the desire to move the additional work along more quickly, the report also contains a work plan for the proposed next phase of the investigation. Upon your review and approval of this phase of work and the proposed next phase of work, Meritor will proceed with the additional investigation work.

Please let me know if you have any questions about the report or the proposed next phase of the investigation.

Sincerely,

James Peeples, PE

Principal Engineer



TML
ogo-

545 Metro Place South, Suite 100

Dublin, Ohio 43017

L (Mobile) (b)(6)

(614) 766-3668 (Office)

(614) 766-3672 (Fax)

JPeebles@tandmassociates.com

www.tandmassociates.com

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***** ATTACHMENT NOT DELIVERED *****

This Email message contained an attachment named
 image001.jpg
 which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

This was done to limit the distribution of computer viruses introduced into the EPA network. EPA is deleting all computer program attachments sent from the Internet into the agency via Email.

If the message sender is known and the attachment was legitimate, you should contact the sender and request that they rename the file name extension and resend the Email with the renamed attachment. After receiving the revised Email, containing the renamed attachment, you can rename the file extension to its correct name.

For further information, please contact the EPA Call Center at (866) 411-4EPA (4372). The TDD number is (866) 489-4900.

***** ATTACHMENT NOT DELIVERED *****



Grenada Manufacturing, LLC draft Fact Sheet

Meredith Anderson to: dwilliams, David.OConnor, JSchiff
Bcc: anderson.meredith

05/07/2010 02:14 PM

As I prepare for the upcoming public comment period for the Preliminary Draft HSWA Permit renewal, I have developed a draft Fact Sheet to mail to the site mailing list. This is attached for your review. Please let me know if you have additional info you would like to add to this Fact Sheet. I would also welcome suggestions of citizens, local community groups, local govt., etc. to add to the mailing list. The RCRA program is improving upon its community engagement efforts, and developing a more comprehensive and site-specific mailing list is one of the ways we are doing that.

Thank you for your input. I look forward to hearing from you.



Permit Renewal Fact Sheet 2010.doc

Meredith C. Anderson
Environmental Engineer
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anderson.meredith@epa.gov

HAZARDOUS AND SOLID WASTE AMENDMENTS

PERMIT RENEWAL STATEMENT OF BASISFACT SHEET

~~GRENADAMANUFACTURINGGRENADA~~
~~MANUFACTURINGGRENADA MANUFACTURING, LLC~~
~~GRENADA, MISSISSIPPI~~

INTRODUCTION

This Hazardous and Solid Waste Amendments Permit Renewal Fact Sheet (Fact Sheet) is prepared for a Hazardous and Solid Waste Amendments of 1984 (HSWA) Permit renewal which was developed by the U.S. Environmental Protection Agency (EPA) for Grenada Manufacturing, LLC. Grenada Manufacturing, LLC is located at 635 Highway 332 in Grenada, Mississippi, 38901. The EPA ID number of this site is MSD 007 037 278.

This Fact Sheet sets forth the principal facts of this ten (10) year HSWA Permit renewal.

the Grenada Manufacturing facility, located at 635 Highway 332 in Grenada, Mississippi. The EPA ID number of this site is MSD 007 037 278.

PERMIT WHY IS CLEANUP NEEDED?

THE RESULTS OF THE RCRA FACILITY INVESTIGATION INDICATED THAT A POTENTIAL HUMAN HEALTH RISK MAY BE POSED BY SITE CONTAMINANTS IN HAD IMPACTED SEVERAL ENVIRONMENTAL MEDIA AT THE SITE. SOIL, GROUNDWATER, AND AIRSURFACE WATER AND SEDIMENT. THESE CONTAMINANTS INCLUDED THE FOLLOWING: TRICHLOROETHENE; CIS-1,2-DICHLOROETHENE; VINYL CHLORIDE; TETRACHLOROETHENE; 1,1,2-TRICHLOROETHANE; 1,2-DICHLOROETHANE; 1,1-DICHLOROETHENE; BENZENE; BIS[2-ETHYL-HEXYL] PHTHALATE; TOLUENE; AND CHROMIUM; LEAD; AND ARSENIC. HOWEVER, A BASELINE RISK ASSESSMENT COMPLETED FOR THE SITE ESTABLISHED THAT THE CONTAMINATION SITE POSES ONLY LOW-LEVEL THREATS FOR ALL MEDIA EXCEPT THE USE OF GROUNDWATER IN THE UPPERMOST UNIT FOR DRINKING WATER PURPOSES (A SCENARIO THAT IS UNLIKELY TO OCCUR).

PUBLIC NOTICE

This Statement of BasisFact Sheet (SB) was developed by the United States

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Environmental Protection Agency (EPA) in order to invite the public to comment on the proposed HSWA Permit renewal. The HSWA Permit for Grenada Manufacturing, LLC will be renewed for a ten (10) year period. This draft Permit is consistent with the previous HSWA Permit for this site, and no changes are being proposed to the existing remedy. EPA is soliciting all relevant information pertaining to this renewal, including public comment, to ensure that the draft HSWA Permit renewal complies with all State and Federal regulations. Public review and comment on the draft Permit and supporting documentation is an important element in the evaluation and resulting recommendation to the EPA Region 4 Regional Administrator. It is subject to change based on information received as a result of public participation. Any and all comments are encouraged. How Do You Participate?

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The public comment period for the proposed remedy Permit renewal will begin on May 7, 2010, and end forty five (45) days thereafter on 7, 2010. the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 60 days thereafter.

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Persons wishing to comment upon the draft HSWA Permit are invited to submit comments in writing to Ms. Meredith Anderson at the address shown below NO LATER THAN the public notice end date of _____, 2010.

Ms. Meredith Anderson
USEPA Region 4
61 Forsyth Street S.W.
Atlanta, GA 30303
(404) 562-8608
anderson.meredith@epa.gov

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A public meeting will be held if EPA Region 4 finds a significant degree of public interest in the proposed Permit. If a public meeting is held, the time and place of the meeting will be published at least thirty (30) days prior.

After consideration of all written and oral comments received during the public comment period, EPA Region 4 will make a decision regarding HSWA Permit issuance. If the determinations are substantially changed, another public notice indicating the revised determinations will be issued.

The draft HSWA Permit and other supporting technical documents can be viewed in Adobe Acrobat format on EPA Region 4's website at:

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<http://www.epa.gov/region4/index.html> <http://www.epa.gov/region4/waste/rcra/PublicNotices.htm>

They are also available for viewing at the following locations:

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Elizabeth Jones Library
1050 Fairfield Avenue
Grenada, MS 38902
(662) 226-2072

Grenada Stamping and Assembly, Inc.,
635 Highway 332,
Grenada, MS 38901
Attn: Mr. Donald Williams
662/226-1161 x6113
dwilliams@iceindustries.com

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FACILITY BACKGROUND

Facility Description

Rockwell Automotive North America Inc. [now Arvin-Meritor] operated a wheel cover manufacturing facility in Grenada, Mississippi from 1966 to 1985 before selling the operations and property to Textron Automotive Company, formerly Randall Textron, who then sold the operations and property to Grenada Manufacturing, LLC in 1999. Grenada Manufacturing, LLC [the Permittee] continues to operate the wheel cover plant but has made several modifications to the product line produced, including the elimination of the chrome plating line for wheel covers. In November 2004, Grenada Manufacturing, LLC filed for Chapter 7 bankruptcy and the facility was acquired by Ice Industries, Inc., who continues to operate a metal stamping facility at the plant. Over the past ten (10) years, many modifications have been made to the product line, which have eliminated waste streams, including the chrome plating line for wheel covers. Ice Industries, Inc. is not a RCRA treatment, storage or disposal facility; however, it generates RCRA hazardous wastes. Therefore, the HSWA Permit continues to be issued to Grenada Manufacturing, LLC.

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The plant property includes approximately 100 acres bisected by State Highway 332. The portion of the site east of the highway is bordered by the Illinois Central Gulf Railroad to the north and east, a swampy area to the south, and the highway to the west. The area west of Highway 332 is bordered by the Illinois Central Gulf Railroad to the north, residential property to the south, the highway to the east, and Riverdale Creek to the west (Figure 1). The facility is located in an industrial park.

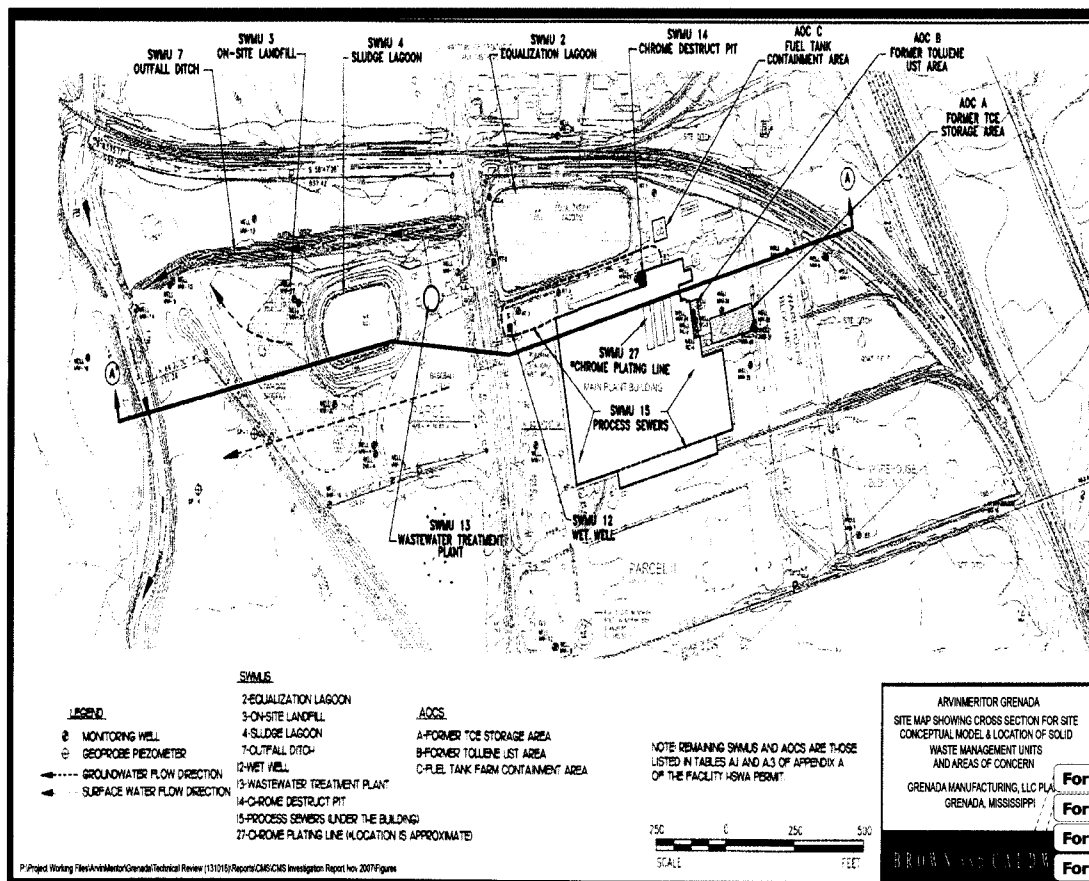
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Regulatory History

In accordance with the facility's HSWA Permit issued July 31, 1998, by EPA, the facility is undergoing HSWA Corrective Action for prior releases of hazardous waste, including hazardous constituents from various specified Solid Waste Management Units (SWMUs).

The RCRA Facility Assessment was conducted in 1997, identified and identified twenty six (26) SWMUs and three (3) Areas of Concern (AOCs). Subsequently in 2002, one more SWMU, the Chrome Plating Line, was identified and added to the list of SWMUs for a total of twenty seven (27).

▲ To that end, Interim Measures to clean up the ~~Grenada Manufacturing~~ Grenada Manufacturing, LLC facility were required by EPA Region 4 in 2000. These activities included a site-wide groundwater monitoring system, source removal, and excavation of contaminated soils. In 2003, EPA ~~called for~~ requested that a final Corrective Measures Study ~~be prepared~~ that would encompass the cleanup measures ~~remedy~~ for the entire ~~site~~ site. In 2004, indoor air monitoring was conducted and found to be negative. A Permeable Reactive Barrier was installed in 2005 as an Interim Measure to treat the groundwater plume and has become a major component of the final remedy. The HSWA Permit was modified and public noticed for the final remedy in 2005. This final remedy consisted of source recovery at AOCs A & B, stabilization of the Sludge Lagoon, continued groundwater monitoring, continued operation and maintenance of the Permeable Reactive Barrier, and select institutional controls.

In 2009, an additional round of indoor air monitoring was conducted, and a review of these results is ongoing. The last component of the final remedy, stabilization of the Sludge Lagoon, will be completed during the summer of 2010. There are no human exposures to, or offsite releases of, hazardous constituents or hazardous wastes at the site.

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Sent: Mon Apr 16 15:55:38 2012

Subject: RE: EPA Comments on 2010 GW Monitoring Report

I finally caught up with Dave Jenkins and confirmed that he is available on the 26th, as am I, for a meeting in Atlanta. Let me know what time works best with your travel plans and we will accommodate accordingly. (Please send the address again also - Sandy Springs area, correct?)

Thank you for your patience.

Meredith

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

-----"O'Connor, David A." <David.OConnor@Meritor.com> wrote: -----

To: Meredith Anderson/R4/USEPA/US@EPA

From: "O'Connor, David A." <David.OConnor@Meritor.com>

Date: 04/12/2012 01:24PM

Cc: "Al-Fayyomi, Ihsan" <IAIFayyomi@brwnald.com>, "Jim Peeples " <jpeeples@brwnald.com>

Subject: RE: EPA Comments on 2010 GW Monitoring Report

Meredith:

April 20th will not work for me inasmuch as I will still be in Indiana working on several cleanup projects. Ihsan, Jim and I would be available to come to Atlanta for a Thursday meeting on April 26th if that works for you and David – meet at Brown & Caldwell's office again for a morning meeting again?



David A. O'Connor
Corporate Environmental Manager
Environmental, Health and Safety Department
248.435.2706 tel) cel

(b)(6)

Meritor, Inc.
2135 West Maple Road
Troy, Michigan 48084 USA
meritor.com



Grenada meeting tomorrow
Meredith Anderson to: Dave Jenkins

04/25/2012 11:56 AM

We are meeting tomorrow at 1:30 at the address below. How about a pre-meeting?

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
404-562-8608
404-562-8439 (fax)
anderson.meredith@epa.gov

----- Forwarded by Meredith Anderson/R4/USEPA/US on 04/25/2012 11:54 AM -----

From: "Al-Fayyomi, Ihsan" <IAIFayyomi@brwnald.com>
To: "O'Connor, David A." <David.OConnor@Meritor.com>, Meredith Anderson/R4/USEPA/US@EPA
Cc: "Peeples, Jim" <JPeebles@brwnald.com>
Date: 04/17/2012 11:21 AM
Subject: RE: EPA Comments on 2010 GW Monitoring Report

Meredith;

Good morning and looking forward to seeing you again, here is our address:

Brown and Caldwell
990 Hammond Drive, Suite 400
Atlanta, GA 30328
Phone: 770-394-2997
Fax: 770-396-9495

We are proposing to meet at our office on the 26th @1:30 PM. Have a great day.

From: O'Connor, David A. [mailto:David.OConnor@Meritor.com]
Sent: Tuesday, April 17, 2012 11:12 AM
To: Anderson.Meredith@epamail.epa.gov
Cc: Al-Fayyomi, Ihsan; Peeples, Jim
Subject: Re: EPA Comments on 2010 GW Monitoring Report

Thanks Meredith. Jim or Ihsan will send you directions to their office with the time.

Dave O'Connor

From: Meredith Anderson <Anderson.Meredith@epamail.epa.gov>
To: O'Connor, David A.
Cc: Al-Fayyomi, Ihsan <IAIFayyomi@brwnald.com>; Jim Peeples <jpeeples@brwnald.com>

From: Meredith Anderson [<mailto:Anderson.Meredith@epamail.epa.gov>]
Sent: Wednesday, April 11, 2012 5:28 PM
To: O'Connor, David A.
Subject: EPA Comments on 2010 GW Monitoring Report

Per EPA's 3/16/12 letter, attached are review comments on the 2010 Monitoring Report. I have put the hard copy of these comments in the mail to you today. Call with any questions. Are you still considering April 20 in Atlanta for a meeting?

(See attached file: Grenada 2010 Monitoring Report review comments.final.041112.pdf)

Meredith C. Anderson
Environmental Engineer
RCRA Div/Corrective Action Section
EPA-Region 4
61 Forsyth Street, SW
Atlanta, GA 30303
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anderson.meredith@epa.gov

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Grenada MW-20 Work Plan and Addendum

Fri 08/10/2012 10:00 AM - 11:00

AM

Attendance is **required** for Meredith Anderson

Chair: David.OConnor@Meritor.com

Location: Conference Call

Required: jpeeples@tandmassociates.com, anderson.meredith@epa.gov

Description

DAVID O'CONNOR invites you to attend an audio conference.

Conference dial-in number:
access code:

(b)(5)

Personal Notes



Grenada RCRA HSWA site

Meredith Anderson to: Ofia Hodoh

Bcc: anderson.meredith

04/16/2010 05:01 PM

Hi Ofia,

I thought I'd touch base with you about the Grenada Indoor Air report review - it's been a while since we last talked. I've been consumed with new duties related to community engagement activities at our sites, so I apologize for the long delay.

Let me know how your review is going. I will be travelling next week to a site south of Grenada, MS and will get a chance to also make a site visit to Grenada Manufacturing. I'll check in with you the week of 4/26 for an update. Thanks so much.

Meredith C. Anderson
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Grenada site maps

Meredith Anderson to: jpeeples

05/20/2010 10:46 AM

Jim,

I hate to bother you with this request, but I am in need of a good quality electronic site map that illustrates all the Grenada SWMUs (for inclusion in the permit and fact sheet). Do you have one that you can easily send to me? I currently have a map I'm using in these documents, but it is of mediocre quality. Unfortunately, I need this asap, so if it's too much trouble, I'll go ahead with the one I have. Thought I'd check, though, just in case. Thanks so much.

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Grenada Site MW20 Area Work Plan DNJenkins Comments

Dave Jenkins to: Meredith Anderson

Cc: jenkins.dave

05/23/2012 02:35 PM

Regarding the MW20 Area work plan at the Grenada site, my only comment concerns Section 2.2

2.2 Installation and Sampling Methods

"A series of three direct-push soil borings will be advanced at the east and west locations shown on Figure 2-1. The borings will be used to attempt to define the extent of VOC impact at these two locations and to select appropriate locations to install sentinel wells. The soils will be logged continuously to a depth of 25 feet, or 15 feet into the zone of saturation to a depth similar to the depth of MW-20. Representative portions of each 2-foot soil interval will be placed in sealed bags for headspace screening. Groundwater samples will be collected at each soil boring through the Geoprobe tooling. These samples will be delivered to Argus Analytical Laboratories in Jackson, Mississippi for VOC analysis with a 24-hour turnaround time. The new monitoring wells will be placed at the locations of the soil borings closest to the current estimated extent of VOC impact."

DNJ COMMENT: The well installation and sampling method described above should be supplemented with the use of ColorTec tubes if this is not already the field screening tool planned for use. This screening technique may have been discussed already with the Brown & Caldwell staff. But in case it has not been discussed, ColorTec tubes could be used as a field screening tool for many chlorinated compounds including PCE, TCE, DCE, VC, carbon tetrachloride & Others (See page 10/19). Field screening provides the field team with information which identifies possible locations for well screen placement and improves the chances that the well screen will be placed in the proper part of the formation. Field screening with ColorTec should be followed by laboratory confirmation where ColorTec screening indicates contamination may be present. Vertical profiling in 2-foot soil intervals may be very informative, but it isn't clear how samples would be selected for laboratory analysis. If field screening is performed properly at 2-foot intervals, only a few samples/well will need to be sent for laboratory analysis. The bagged 2-foot samples can be heated on the dashboard of a car then sampled as described in the document attached below.

This is a good field screening tool for many chlorinated compounds including PCE, TCE, DCE, VC, carbon



tetrachloride & others (E&E_color_tec 2006.pdf See page 10/19). This technique has been used at numerous sites in EPAR4 during the last 10 years and has had wide-spread use in the Florida DEP Dry Cleaners program for delineating the occurrence an extent of chlorinated solvent contamination in soil and groundwater. Field screening provides the field team with information regarding chlorinated solvents which is not available from typical PID or FID field screening tools. These data can identify possible locations for well screen placement and help insure the screen is of the right length and is set in the right place.

Please call me if you have any questions.

David N. Jenkins
Hydrogeologist
Technical Support Section
Superfund Division
U.S. EPA Region 4,

61 Forsyth St 11th Floor
Atlanta, GA 30303
404-562-8462

----- Forwarded by Dave Jenkins/R4/USEPA/US on 05/23/2012 01:57 PM -----

From: Dave Jenkins/R4/USEPA/US
To: Meredith Anderson/R4/USEPA/US@EPA
Cc: jenkins.dave@epa.gov
Date: 04/19/2012 03:45 PM
Subject: ColorTec tubes detect Carbon Tetrachloride!!

[attachment "E&E_color_tec 2006.pdf" deleted by Dave Jenkins/R4/USEPA/US]

This should be a good field screening tool for many chlorinated compounds including PCE, TCE, DCE, VC, carbon tetrachloride & Others See page 10/19



Grenada Sludge Lagoon Project Schedule

O'Connor, David A.

to:

Meredith Anderson

02/17/2010 10:08 AM

Cc:

"Don Williams", "Ihsan Al-Fayyomi ", "Jim Peeples "

Hide Details

From: "O'Connor, David A." <David.OConnor@ArvinMeritor.com>

To: Meredith Anderson/R4/USEPA/US@EPA,

Cc: "Don Williams" <dwilliams@iceindustries.com>, "Ihsan Al-Fayyomi "

<IAlfayyomi@brwnald.com>, "Jim Peeples " <jpeeples@brwnald.com>

History: This message has been replied to and forwarded.

1 Attachment



Grenada Schedule 3-1-10 Start.pdf

Meredith:

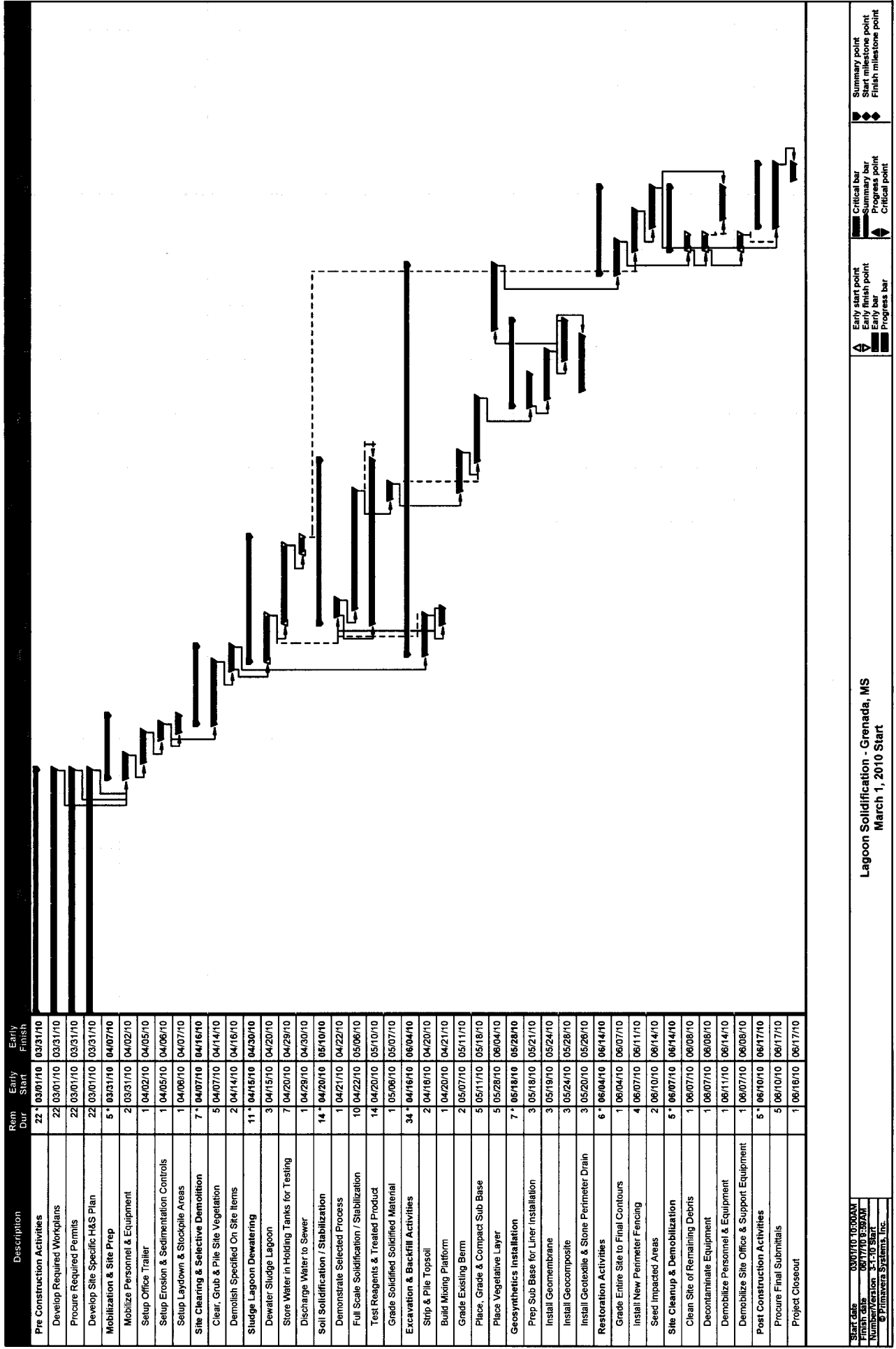
Attached is the project schedule for the sludge lagoon work at Grenada, MS. Please call me with any questions.

David O'Connor
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(b)(6)

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Lagoon Solidification - Grenada, MS
March 1, 2010 Start

Start date: 03/01/10 03:00AM
Finish date: 06/17/10 9:39AM
Number/Version: 3-1-10 Start
© Primavera Systems, Inc.



Grenada update

Meredith Anderson to: O'Connor, David A.
Bcc: Meredith Anderson

11/09/2012 04:26 PM

Hi David,

I was very glad that I was able to get on-site during some of the work in the MW-20 area last month. It was a good learning experience for me to see how the color tech screening process worked, and your field crew did an excellent job. I was disappointed and perplexed, as Jim was, with the results that were noted north of that area - we definitely have a challenge now to figure out what's going on. Can you give me a status of that mobilization effort? - did the semi-annual sampling occur as planned, when do you expect analytical data from the lab, when do you want to discuss the next steps and a plan of action going forward?

Thanks so much. I am travelling next week but will be checking my email frequently.

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Grenada update
Meredith Anderson to: jenkins.dave

10/18/2012 01:28 PM

Hi Dave,
I'm onsite here in Grenada. Our PRB wells went in earlier this week. the well north of MW-20 shows chlorinated contaminants at 17' to 25' by color rec tube method. We are now moving east to put in the next well north of the train tracks. Then west. Will update you again later.

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